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ANIMAL BIOGRAPHY;

OR,

ANECDOTES

OF THE

LIVES, MANNERS, AND ECONOMY,

OF THE

ANIMAL CREATION,

ARRANGED ACCORDING TO THE SYSTEM OF LINNÆUS.

BY THE REV. W. BINGLEY, A.B.

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AND LATE OF ST. PETER'S COLLEGE, CAMBRIDGE.

IN THREE VOLUMES.

VOL. II.

QUADRUPEDS—BIRDS.

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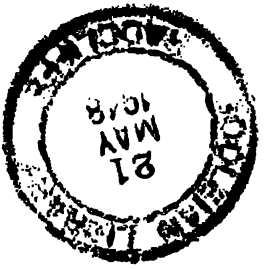
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QUADRUPEDS.

THE CAMEL TRIBE.*

THE Camels, like all the other genera of this order, are provided with four stomachs, in consequence of which they not only live solely on vegetable food, but ruminate or chew the cud. They swallow their food unmasticated. This is received into the first stomach, where it remains some time to macerate; and afterwards, when the animal is at rest, by a peculiar action of the muscles, it is returned to the mouth in small quantities, chewed more fully, and then swallowed a second time for digestion.

There are *seven* species, two of which only are found on the old continent, the rest being confined to South America. In the lower-jaw are found six front teeth, which are somewhat thin and broad: the canine-teeth are at a little distance both from these and the grinders; in the upper jaw there are three, and in the lower two. The upper lip is divided.

* The Linnæan order PECORA commences with this tribe.

THE ARABIAN CAMEL.*

This species is chiefly found, in a wild ſtate, in the deserts of Arabia and Africa, and in the temperate parts of Asia. It is that, with a ſingle hunch on its back, which we so frequently see exhibited in the ſtreets in this country. In many parts of the eaſt it is domesticated, and in carrying heavy burthens over the sandy deserts, supplies a place which the Horse would not be able to fill. The tough and spungy feet of these animals are peculiarly adapted to the hot climates, for, in the most fatiguing journies, they are never found to crack. Their great powers of abstaining from drinking, enables them to pass unwatered tracts of country for seven, eight, or, as Leo Africanus says, for even fifteen days, without requiring any liquid. They can discover water by their scent at half a league's distance, and, after a long abstinence, will hasten towards it, long before their drivers perceive where it lies. Their patience under hunger is such, that they will travel many days fed only with a few dates, or some small balls of barley-meal; or on the miserable thorny plants they meet with in the deserts.†

A large Camel will bear a load of a thousand or twelve hundred pounds, and with this it will traverse the deserts. When about to be loaded, at the command of the conductor, they instantly bend their

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* SYNONYMS.—Camelus Dromedarius. *Linn.*—Dromedaire. *Buff.*—Dromedary. *Smellie.*—Arabian or One-Bunched Camel. *Penn.*—*Shaw's Gen. Zool.* ii. *tab.* 166.—*Benn. Quad. p.* 140.

† Penn. Quad. i. 118.

knees. If any disobey, they are immediately struck with a stick, or their necks are pulled down; and then, as if constrained, and uttering their groan of complaint, they bend themselves, put their bellies on the earth, and remain in this posture till they are loaded and desired to rise. This is the origin of those large callosities on the parts of their bellies, limbs, and knees, which rest on the ground. If overburthened, they give repeated blows with their heads to the person who oppresses them, and sometimes utter the most lamentable cries.*

They possess a very great share of intelligence, and the Arabs assert that they are so extremely sensible of injustice and ill-treatment, that when this is carried too far, the inflictor will not find it easy to escape their vengeance; and that they will retain the remembrance of an injury till an opportunity offers for gratifying their revenge. Eager, however, to express their resentment, they no longer retain any rancour, when once they are satisfied; and it is even sufficient for them to believe they have satisfied their vengeance. Accordingly, when an Arab has excited the rage of a Camel, he lays down his garments in some place near which the animal is to pass, and disposes them in such a manner that they appear to cover a man sleeping under them. The animal recognizes the cloaths, seizes them in his teeth, shakes them with violence, and tramples on them in a rage. When his anger is appeased, he leaves them, and then the owner of the garments may

* Buff. Quad.

make his appearance without any fear, load, and guide him as he pleases. "I have sometimes seen them," says M. Sonnini, "weary of the impatience of their riders, stop short, turn round their long neck to bite them, and utter cries of rage. In these circumstances the man must be careful not to alight, as he would infallibly be torn to pieces: he must also refrain from striking his beast, as that would but increase his fury. Nothing can be done but to have patience, and appease the animal by patting him with the hand, (which frequently requires some time), when he will resume his way and his pace of himself."*

Like the Elephant, Camels have their periodical fits of rage, and during these they sometimes have been known to take up a man in their teeth, throw him on the ground, and trample him under their feet.

There is no mode of conveyance so cheap and expeditious as that by Camels. The merchants and other passengers unite in a caravan to prevent the insults and robberies of the Arabs. These caravans are often very numerous, and are always composed of more Camels than men. In these commercial travels their march is not hastened: as the route is often seven or eight hundred leagues, their motions and journies are regulated accordingly. The Camels only walk, and travel thus from ten to twelve leagues a day. Every night they are unloaded, and allowed to pasture at freedom.

When in a rich country or fertile meadow, they

* Sonnini, ii. 102.

eat, in less than an hour, as much as serves them to ruminate the whole night, and nourish them during the next day. But they seldom meet with such pastures, neither is this delicate food necessary for them. They seem to prefer wormwood, thistles, nettles, broom, cassia, and other prickly vegetables, to the softest herbage. As long as they find plants to brouze, they easily dispense with water. This faculty of abstaining long from drink proceeds not, however, from habit alone, but is rather an effect of their structure. Independent of the four stomachs common to ruminating animals, the Camels have a fifth bag, which serves them as a reservoir for holding water. This bag is capable of containing a very large quantity of that necessary element. When the Camel is thirsty, and has occasion to macerate his dry food, in the operation of ruminating, by a simple contraction of certain muscles, he forces part of his water to ascend into his stomach, or even as high as the gullet. It is this singular construction that enables him to take in at one time sufficient to serve for many days.

When travellers find themselves much in want of water, it is no uncommon thing to kill a Camel for what he contains, which is always sweet and wholesome. Aristotle says, that the Camel always disturbs the water with its feet before it drinks: if this be the case, which, it must be confessed, seems very dubious, it is done to chase away the almost innumerable swarms of insects with which the waters of warm climates abound.

"Of all animals," says the Comte de Buffon,

" that man has subjugated, the Camels are the most abject slaves. With incredible patience and submission they traverse the burning sands of Africa and Arabia, carrying burthens of amazing weight. The Arabians consider the Camel as a gift sent from Heaven, a sacred animal, without whose assistance they could neither subsist, traffic, nor travel. The milk of the Camel is their common food. They also eat its flesh; and of its hair they make garments. In possession of their Camels, the Arabs want nothing, and have nothing to fear. In one day they can perform a journey of fifty leagues into the desart, which cuts off every approach from their enemies. All the armies in the world would perish in pursuit of a troop of Arabs. By the assistance of his Camel, an Arab surmounts all the difficulties of a country which is neither covered with verdure, nor supplied with water. Notwithstanding the vigilance of his neighbours, and the superiority of their strength, he eludes their pursuit, and carries off with impunity all that he ravages from them. When about to undertake a depredatory expedition, an Arab makes his Camels carry both his and their own provisions. When he reaches the confines of the desart, he robs the first passengers who come in his way, pillages the solitary houses, loads them with the booty, and, if pursued, he accelerates his retreat. On these occasions he displays his own talents as well as those of his Camels. He mounts one of the fleetest, conducts the troop, and obliges them to travel day and night, without almost either stopping, eating, or drinking; and, in this manner,

he often performs a journey of three hundred leagues in eight days."*

With a view to his predatory expeditions, the Arab instructs, rears, and exercises his Camels. A few days after their birth he folds their limbs under their belly, forces them to remain on the ground, and in this situation loads them with a pretty heavy weight, which is never removed but for the purpose of replacing it by a greater. Instead of allowing them to feed at pleasure, and to drink when they are thirsty, he begins with regulating their meals, and makes them gradually travel long journies, diminishing at the same time the quantity of their aliment. When they acquire some strength they are trained to the course, and their emulation is excited by the example of horses, which, in time, renders them not only fleet, but more robust than they would otherwise be. In Egypt their value is, according to their goodness, from two to five hundred livres.

The saddle used by the Arabs is hollowed in the middle, and has at each bow a piece of wood placed upright, or sometimes horizontally, by which the rider keeps himself on his seat. This, with a long pocket to hold provision for himself and his beast, a skin of water for the rider (the animal being otherwise well supplied) and a leather thong, are the whole of the equipage that the Arab traveller stands in need of, and with nothing more than these he is able to cross the desarts.

* Buff. Quad.

The pace of the Camel being a high trot, this mode of travelling, to those unused to it, is fatiguing to excess: the loins are broken; the hands, soon galled, become very painful, and the burning air, which is divided with rapidity, impedes the breath, so as almost to induce suffocation.—Perhaps the most extraordinary journey that was ever made on Camels was that mentioned by M. Sonnini. A Bedouin Arab travelled from Cairo to Mecca, a distance of more than four hundred leagues, in five days: this journey usually occupies, with the caravan of pilgrims, above a month.

When the traveller is not in haste, or when he accompanies a caravan, the progress of which is always slow on account of the Camels of burthen, a kind of covered litter is fixed on one of these animals, in which he is tolerably at his ease, and where he may even sleep if he chuses.*

The drivers of the loaded Camels have each a stick, which they use sparingly, if occasion requires; and those who ride, whip their animals with a long strap of leather, at the same time urging them with a clicking of the tongue, the same as the Europeans use to their Horses. It has been asserted by Mr. Pennant and some other writers, that Camels may be made to go more freely by whistling to them; this, however, is a mistake; and the Bedouin Arabs, who own immense numbers of Camels, not only never whistle themselves, but it even gives them pain to hear any others do it.†

* Sonnini. ii. 103. † Ibid. ii. 105.

The mode in which the loaded Camels were made to cross the Nile, attracted the particular attention of Mr. Norden, as extremely singular : a man, he says, swam before, with the bridle of the first Camel in his mouth ; the second Camel was tied to the tail of the first, and a third to the tail of the second : another man, sitting on a truss of straw, brought up the rear, and, by his directions, was employed in keeping the second and third Camels in their course.*

Camels were formerly taught to use some awkward dancing gestures for the amusement of the populace, to whom they were exhibited for money.—In this acquisition they had to undergo an ordeal similar to that horrid one which is even yet adopted with the Bear. Whilst very young they were put, for about half an hour at a time, into a kind of stove, the floor of which was made hot by means of fires beneath it : a drum was beat, and the tortured animals, from excess of pain, lifted their legs in quick succession one after another. Being accustomed to this exercise, at stated times, for near a year, they were presented to the public, and, from a natural association, whenever the noise of the drum was repeated, which invariably accompanied their former tortures, they always commenced the same unnatural motions.†

It has been attempted, but without success, to introduce Camels into our West India islands. The people were unaccustomed to their habits and man-

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* Voyage d Egypte. † Leo Africanus, 339.

ner of feeding; and this, together with the insects called Chigoes,* insinuating themselves into their soft feet, and producing inflammations, and, at length, painful ulcers, seem to have rendered them totally unfit for service.†

The flesh of the Camel is dry and hard, but not unpalatable. It is so much esteemed by the inhabitants of Egypt, that, in Cairo and Alexandria it was, not long ago, forbidden to be sold to the Christians. In Barbary, the tongues are salted and smoked for exportation to Italy and other countries, and they form a very good dish. The hair is an important article of commerce, serving for the fabrication of the tents and carpets of the Arabs; and leather is made of the skin. In the materia medica of China, the different parts of the Camel occupy a conspicuous place: the fat is called the oil of bunches, and the flesh, the milk, the hair, and even their dung, are admitted into the prescriptions of the Chinese physicians.

THE LAMA‡.

This animal inhabits the high mountains of Peru, Chili, and other parts of South America. Its height is about four feet and a half, and its length, from the neck to the tail, near six feet. The usual weight is about 300 pounds. The back is nearly even, and instead of a hunch there the animal has a protuberance on the breast. The head is small, with fine

* Pulex Penetrans of Linnæus, see vol. iii.

† Browne's Jamaica, 488.

‡ SYNONYMS. — Camelus Glama. *Linn.*—Llama. *Penn.*—Lama. *Buff.*—Glama. *Kerr.*——*Shaw's Gen. Zool.* ii. *tab.* 168.

black eyes, and the neck is very long and arched. The general shape is that of a Camel without the dorsal protuberance. In a wild state the hair of the Lama is long and coarse; but, when domesticated, it becomes short and smooth: the colour is white, grey, and russet, disposed in spots.

The Lama is mild, gentle, and tractable, and used in many parts of South America for the carrying of burthens. In the Spanish settlements, before the introduction of mules, it was employed in ploughing of land. These animals go on their journies with great gravity, and nothing can induce them to change their pace. Like the Camel, they lie down to be loaded; and, when they are wearied, no blows will provoke them to proceed. Their disposition is indeed so capricious, that sometimes when they are struck, they instantly lie down, and caresses only will induce them again to rise. When provoked, they have no other mode of avenging themselves but by spitting, and they have the power of ejecting their saliva to the distance of nine or ten yards: this is of such a corroding quality, that if it falls on the skin, it raises an itching, and causes some degree of inflammation.*

They are employed in transporting the rich ores out of the mines of Potosi. In their journies, they will sometimes walk four or five days successively before they seem desirous of repose; and they then rest spontaneously twenty or thirty hours before they resume their toil. Sometimes, when they are

* Penn. Quad. i. 122.

inclined to rest a few minutes only, they bend their knees, and lower their bodies with great care, to prevent their load from falling off, or being deranged: when, however, they hear their conductor's whistle, they rise with equal precaution, and proceed on their journey. In going along in the day, they brouze wherever they find herbage, and generally spend the night in chewing the cud. If their masters continue to abuse them after they are determined not to rise, they are said sometimes to kill themselves, in their rage, by striking their heads alternately from right to left on the ground.*

When among their native mountains, they associate in immense herds in the highest and steepest parts, where they frequently climb rocks, along which no man would dare to follow them; and, while the rest of a herd feed, one of them is always stationed as a centinel on the point of some rock. When this animal observes any one approach, it gives a kind of neigh, and the herd, taking the alarm, run off with incredible speed. When they have gone to a considerable distance they stop, turn round, and gaze at their pursuers till they come near, and then they set off again. They out-run all the dogs, so that the inhabitants have no other mode of killing the wild animals than with guns.

In the year 1558 one of these aninals was brought alive from Peru into Holland.

The flesh is eaten, and said to be as good as mutton. The wool or hair has a strong and unpleasant

* Buff. Quad.

smell, but is of considerable use to the Indians, who weave it into cloth. Of the skin, which is very compact, they make shoes, and the Spaniards use it for their harness.

Their growth is exceedingly quick; being capable of producing at three years old, and beginning to decay at twelve.

THE MUSK TRIBE.

THE animals of this tribe have no horns. In the lower-jaw are eight front-teeth; and in the upper-jaw two long tusks, one on each side, which project out of the mouth.

THE THIBETIAN MUSK.*

The present species, the principal one of the tribe, is destitute of horns. The ears are somewhat large, the neck thick, and the hair on the whole body long, upright, and thick set. Each hair is undulated, the tip ferruginous, the middle black, and the bottom cinereous. The limbs are very slender, and of a full black colour; and the tail is so short as to be scarcely visible. The length of the male is about three feet, and that of the female about two feet and a quarter; and the average weight is from twenty-five to thirty pounds.

The Thibetian Musk is a native of many parts of

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* SYNONYMS. — Moschus Moschiferus. *Linn.*—Musc. *Buffon.*—Thibet Musk. *Penn.*——*Shaw's Gen. Zool.* ii. *tab.* 171.—*Berr. Quad.* p. 103.

Asia, and is found throughout the whole kingdom of Thibet. It lives retired among the highest and rudest mountains. Except in autumn, it is a solitary animal; but at this season large flocks collect in order to change their place, being driven southward by the approaching cold. During this migration the peasants lay in wait for them, and either take them in snares, or kill them with arrows and bludgeons. At these times they are often so meagre and languid from hunger and fatigue, as to be taken without much difficulty.

They are gentle and timid, possessing no weapons of defence except their tusks. Their activity is very great, and they are able to take astonishing leaps over the tremendous chasms of the rocks. They tread so lightly on the snow, as scarcely to leave a mark, while the dogs that are used in pursuing them, sink in, and are frequently obliged to desist from the chase. In a state of captivity they live but a very short time. They feed on various vegetables of the mountains.

They are usually taken in snares, or shot by cross-bows placed in their tracks, with a string from the trigger for them to tread on and discharge. Sometimes they are shot with bows and arrows. Their chase is extremely laborious.

In an oval receptacle about the size of a small egg, is contained the well-known drug called *musk*. This hangs from the middle of the abdomen, and is peculiar to the male animal. A full-grown male will yield a drachm and a half, and an old one two drachms. The bag is furnished with two small orifices, the one naked, and the other covered with ob-

long hairs. Gmelin tells us, that on squeezing this bag, he forced the musk through the apertures, in the form of a brown fatty matter. The hunters cut off the bag and tie it up for sale, but often adulterate the contents by mixing them with other matter to increase their weight. The musk is even frequently taken entirely out, and a composition of the animal's blood and liver, (for the musk has much the appearance of clotted blood) is inserted in its stead; but when the bags are opened the imposition may be immediately detected. The deceit, however, most commonly practised, is that of putting into the bags little bits of lead in order to augment the weight.—The animals should be found here in great number, for Tavernier informs us, that in one journey he collected 7673 musk bags.

It is generally asserted, that when the musk-bag is first opened, so powerful an odour comes from it, that every person present is obliged to cover his mouth and nose with several folds of linen, and that, notwithstanding this precaution, the blood will frequently gush from the nose. When the musk is fresh, a very small quantity in a confined place is insupportable: it causes giddiness in the head, and hemorrhages, which have sometimes proved fatal.

Besides being of use on account of the musk they produce, the skins of these animals, in many of the countries where they are found, are used as winter-cloathing. The Russians scrape off the hair, and have a method of preparing the leather so as to render it as soft and shining as silk; this they adopt as part of their summer-dress.

THE DEER TRIBE.

THIS is an active tribe, inhabiting principally wild and woody regions. In their contentions, both among each other and with the rest of the animal creation, Deer not only use their horns, but also strike very furiously with their fore-feet. Some of the species are used by mankind for draught. The flesh of the whole tribe is wholesome, and that of some of the kinds, under the name of venison, is accounted particularly delicious.

The horns are solid and branched. They are renewed every year; and while young are covered with a skin, which is extremely vascular, and clothed with a fine velvet fur, that dries, shrivels, and falls off when the horns have attained their full size. There are eight front-teeth in the lower-jaw. In general this tribe is destitute of canine-teeth, but sometimes a single one is found on each side in the upper-jaw.

THE ELK.*

The Elk, or Moose-deer, is found in Europe, America, and Asia, as far as Japan; but it is met with in greatest quantity in the northern parts of

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* SYNONYMS.—Cervus alces. *Linn.*—Mose Deer. *Dudley*—Moose Elk. *Penn.*—Elan. *Buffon.*——*Shaw's Gen. Zool. ii. tab.* 174—175.—*Brew. Quad. p.* 108.

both continents, where it frequents the forests. It is often larger than the Horse, both in height and bulk; but the length of the legs, the bulk of the body, the shortness of the neck, and uncommon length of the head and ears, without any appearance of a tail, render its form very awkward. The hair of the male (which far exceeds the female in size), is black at the points, cinereous in the middle, and at the roots perfectly white. That of the female is of a sandy-brown, but whitish under the throat, belly, and flank. The upper-lip is square, very broad, deeply furrowed, and hangs much over the mouth; the nose is broad, and the nostrils extremely large and wide. The horns, which are found only on the males, have no brow-antlers, and the palms are extremely broad. They are shed annually, and some have been seen that weighed upwards of sixty pounds.

The legs of the Elks are so long, and their necks so short, that they cannot graze on level ground, like other animals, but are obliged to brouze the tops of large plants, and the leaves or branches of trees.

In all their actions and attitudes they appear very uncouth, and when disturbed never run, but only make off in a kind of trot, which the length of their legs enables them to do with great swiftness, and apparently with much ease. In their common walk they lift their feet very high, and they are able, without any difficulty, to step over a gate five feet in height.

Their faculty of hearing is supposed to be more

more acute than either their sight or scent, which renders it very difficult to kill them in the summer time, as the Indians have then no other method of doing it but by creeping after them among the trees and bushes, till they get within gun-shot. In winter, when the snow is so hard frozen that the natives can go upon it in their snow-shoes, they are able frequently to run them down, for their slender legs break through the snow at every step, and plunge them up to the belly. They are so tender-footed, and so short-winded, that a good runner will generally tire them in less than a day; there have been some, however, that have kept the hunters in chace for two days. On these occasions the Indians, in general, take with them nothing more than a knife or bayonet, and a little bag containing implements for lighting a fire. When the poor animals are incapable of further speed, they stand and keep their pursuers at bay with their head and fore-feet; in the use of the latter of which they are so dexterous, that the Indians are generally obliged to lash their knives or bayonets at the end of a long stick, and stab the Elk at a distance.* Some who have neglected this necessary precaution, and rashly attempted to rush in upon them have received very serious blows from their fore feet.† When wounded they sometimes become furious, rush boldly on the hunters, and endeavour to tread

* They will kill a Dog, and sometimes even a Wolf, by a single blow with one of their fore-feet.

† Hearne, 255.

them down: in this case the men are frequently compelled to leave their outer-garments, (on which the animals wreck their vengeance) and escape into the trees.*

In summer the Elks frequent the margins of rivers and lakes, getting into the water in order to avoid the innumerable multitudes of Muskettoes and other flies that pester them during that season. They are often killed by the Indians, while they are crossing rivers or swimming from the main land to islands. When pursued in this situation they are the most inoffensive of all animals, never making any resistance. And the young ones are so simple that, in North America, Mr. Hearne, saw an Indian paddle his canoe up to one of them, and take it by the poll without the least opposition; the poor harmless animal seeming, at the same time, as contented along-side the canoe, as if swimming by the side of its dam, and looking up in the faces of those who were about to become its murderers with the most fearless innocence; using its fore-foot almost every instant to clear its eyes of Muskettoes, which at the time were remarkably numerous.†

Sometimes the Indians assemble in multitudes in their canoes, and form with them a vast crescent towards the shore. Large parties then go into the woods, surround an extensive tract, let loose their Dogs, and press, with loud hallooings, towards the water. The alarmed animals fly before

* Charlevoix, i. p. 199. † Hearne, 256.

the hunters, and plunge into the lake, where they are killed with lances or clubs by the persons prepared for their reception in the canoes.

The Indians also sometimes inclose a large piece of ground with stakes, woven with branches of trees, which form two sides of a triangle, the bottom opening into a second inclosure completely triangular. In the opening are hung snares made of slips of raw hides. The Deer are driven by a party in the woods, into the first inclosure, and some endeavouring to force their way into the farthest triangle, are caught in the snares by their neck or horns: and those which escape the snares, and pass the opening, meet their fate from the arrows of the hunters directed at them from all quarters.*

The Elks are the easiest to tame and domesticate of any of the Deer kind. They will follow their keeper to any distance from home, and at his call return with him, without the least trouble, and without ever attempting to deviate from the path.

An Indian had, at the Factory at Hudson's Bay, in the year 1777, two of them so tame, that when he was on his passage to Prince of Wales's Fort, in a canoe, they always followed him along the bank of the river; and at night, or on any other occasion, when he landed, they generally came and fondled on him, in the same manner as the most domestic animal would have done, and never

* Penn. Arct. Zool. i. 19.

offered to stray from the tents. He did not, however, possess these animals long, for he one day crossed a deep bay in one of the lakes, in order to save a very circuitous rout along its bank, and expected the creatures would, as usual, follow him round, but unfortunately at night they did not arrive; and as the howling of Wolves was heard in the quarter where they were, it is supposed they had been devoured by them, for they were never afterwards seen.*

M. D'Obsonville mentions his having in his possession, while in the East Indies, an animal which he calls a Moose-deer. From the warmth of that climate it seems very doubtful whether this was not some other species, but as we have no satisfactory proof of its being such, we shall recite his account. "I procured it (he says) when only ten or twelve days old, and had it for about two years, without ever tying it up. I even let it run abroad, and sometimes amused myself with making it draw in the yard, or carry little burthens. It always came when called, and I found few signs of impatience, except when it was not allowed to remain near me. When I departed for the island of Sumatra, I gave it to Mr. Law of Lauriston, the governor-general, an intimate friend. This gentleman, not having an opportunity of keeping it about his person, as I had done, sent it to his country house. Here, being kept alone, and chained in a confined corner, it presently became so furious as not to be approached.

* Hearne, 260.

Even the person who every day brought its food was obliged to leave this at a distance. After some months absence I returned: it knew me afar off, and as I observed the efforts it made to get at me, I ran to meet it; and never shall I forget the impression which the caresses and transports of this faithful animal made upon me. A friend, who was present at the meeting, could not forbear sympathizing with me, and partaking of my feelings."*

An attempt has been made at New York to render the Elk useful in agricultural labours, which has been attended with success. Mr. Chancellor Livingston, the president of the New York Society, had two of these animals broken to the harness. Though they had been only twice bitted, and were two years old, they appeared to be equally docile with Colts of the same age. They applied their whole strength to the draught, and went on a steady pace. Their mouths appeared very tender, and some care was necessary to prevent them from being injured by the bit. If, upon trial, it is found that the Elks can be rendered useful in harness, it will be a considerable acquisition to the Americans. As their trot is very rapid, it is probable that, in light carriages, they would out-travel the Horse. They are also less delicate in their food than that animal, becoming fat on hay only. They are long-lived, and more productive than any beast of burthen.†

The Indians have a superstitious notion that there

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* D'Obsonville, 104. † Trans. of the New York Society, part iii.

is an Elk of such an enormous size, that eight feet in depth in snow is no impediment to its walking. That its hide is proof against weapons of every description; and that it has an arm growing out of its shoulder subservient to the same purposes as ours. They also believe that this imaginary animal is attended by a vast number of other Elks, which form his court, and render him every service that a sovereign can require of them.*

They esteem the Elk an animal of good omen, and believe that to dream of it often is an indication of long life.

When suddenly roused, and it is endeavouring to make its escape, the Elk is observed at times to fall down, as if deprived for some moments of motion. Whether this be owing, as has frequently been imagined, to an epileptic fit, or whether it merely arises from fear (as is sometimes observed to be the case in horses,) is not perhaps easy to determine. The fact, however, is too well authenticated to admit our doubting it. This has given rise to the popular superstition of attributing to the hoofs the virtue of an anti-epileptic medicine; and the Indians even still imagine that the Elk has the power of curing itself of its own disorder, or of preventing an approaching fit, by scratching its ear with the hoof till it draws blood.†

The flesh of the Elk is good, but the grain is coarse, and it is much tougher than any other kind of venison. Mr. Hearne remarks, that the

* Charlevoix, i. 198. † Shaw's Mus. Lev. 33.

livers of these animals are never sound; and that, like the other Deer, they have no gall. According to Mr. Pennant, the tongues are excellent, and the nose so like marrow as to be esteemed the greatest delicacy produced in Canada.*

Their skins, when dressed by the natives, make excellent tent-covers and shoe-leather. They are of very unequal thickness, but some of the Indian women, who are acquainted with the manufacture of them, by means of scraping, render them as even as a piece of thick cloth; and, when well-dressed, they are very soft. The hair of the hams, which is of great length, is used in stuffing mattrasses and saddles.

The females have from one to three young at a time, and generally produce them in the latter end of April, or about the beginning of May.†

THE REIN DEER.‡

The Rein Deer is found in most of the northern regions both of Europe, Asia, and America. Its general height is about four feet and a half. The colour is brown above and white beneath, but as the animal advances in age it often becomes of a greyish white. The space about the eyes is always black. The hair on the under part of the neck is much longer than the rest. The hoofs are long, large, and

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* Hearne, 260.—Penn. Arct. Zool. i. 19.

† Charlevoix, i. 198.—Hearne.—Pennant.

‡ SYNONYMS.—Cervus tarandus. *Linn.*—Renne. *Buffon.*—Rein Deer. *Penn.*——*Shaw's Gen. Zool. ii. tab.* 175.—*Bew. Quad. p.* 114.

black. Both sexes are furnished with horns, but those of the male are much the largest. These are long, slender, and branched; furnished with brow-antlers, having widely expanded and palmated tips, directed forwards.

To the Laplanders this animal is the substitute for the Horse, the Cow, the Goat, and the Sheep; and is their only wealth. The milk affords them cheese; the flesh, food; the skin, cloathing; the tendons, bow-strings, and, when split, thread; the horns, glue; and the bones, spoons. During the winter the Rein-deer supplies the want of a Horse, and draws their sledges with amazing swiftness over the frozen lakes and rivers, or over the snow, which at that time covers the whole country.

A rich Laplander is often possessed of a herd of more than a thousand Rein-deer. In autumn these seek the highest hills to avoid the Lapland Gad-fly,* which, at that time, deposits its eggs in their skin: it is the pest of these animals, and numbers die that are thus visited. The moment a single Fly appears, the whole herd instantly perceive it; they fling up their heads, toss about their horns, and at once attempt to fly for shelter amidst the snows of the loftiest Alps. In summer they feed on several plants; but during winter on the Rein-deer liverwort,† to get at which, as it lays far be-

* Oestrus tarandi of Linnæus. The skins of the Rein-deer, after they are killed, are sometimes found to be as full of holes as a sieve, from the operations of these insects.

† Lichen Rangiferinus of Linnæus.

neath the snow, they dig with their feet and antlers. It is, therefore, a most kind dispensation of Providence, that in the Deer the only tribe living among snows, most of the females should be furnished with horns, the more readily to provide themselves with food. But besides this there is another lichen, that hangs on the Lapland pines, which affords food to the Rein-deer, when the snows are too deep to allow them to reach their other food. When the snow is impenetrably frozen, the boors cut down frequently some thousands of these moss-clad trees, for the sustenance of their herds.*

During the summer these animals lose their vigour and swiftness, and are soon overcome by the heat. Mr. Consett saw them reclining in the woods, and apparently so enfeebled, as scarcely to be able to move out of the way. When thus oppressed they frequently make a noise like the grunting of a Hog.†

Besides the Gad-fly they have several other enemies, the chief of which are Bears and Wolves; but unless taken by surprize, or when their horns are newly shed, they are frequently able to defend themselves against the attacks of these animals, and even entirely drive them off. In this work they use their fore-feet as well as their horns; and with these they strike with astonishing force. They are also subject to diseases, which sometimes sweep off whole herds.‡

With a couple of these animals yoked to a sledge,

* Consett, 125. † Consett, 63.—Scheffer, 330. ‡ Scheffer.

it is said that a Laplander is able to travel 112 English miles in a day. The Laplanders say, that they can thrice change the horizon in twenty-four hours: that is, they can three times pass that object, which, at their setting out, they saw at the greatest distance they could reach with their eyes.*

The sledge is formed somewhat like a boat, having a back board in it for the rider to lean against. Its bottom is convex, and none but a person well practised in such a mode of travelling, could preserve himself from oversetting every moment. It is square behind, but projects to a point before. The traveller is tied in it like a child in a cradle. He manages his carriage with great dexterity, by means of a stick with a flat end, to remove stones or any obstructions he may meet with. To the peak in front a thong is fixed, which yokes the Rein-deer. The bit is a piece of narrow leather tacked to the reins of the bridle over the animal's head and neck; and from the breast a leather-strap, passing under the belly, is fastened to the fore-part of the sledge, which serves instead of shafts. The sledge, which is extremely light, is balanced by a careful poise of the body and hands.† The person in the sledge drives the animal by means of a goad, and encourages it with his voice: for this purpose it is that their love-songs are in general composed. Among these are found some beautiful specimens of the poetry of a rude and uncivilized nation: two or three of them have appeared in an English dress, and have met with the admiration

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* Scheffer, 275. † Consett, 67.—Scheffer, 273.

they so justly deserve. One less known than the rest we insert from Mr. Consett's tour in Lapland.

The snows are dissolving on Tornao's rude side,
And the ice of Lulhea flows down the dark tide:
Thy dark stream, oh Lulhea, flows freely away,
And the snow-drop unfolds her pale beauties to day.

Far off the keen terrors of winter retire,
And the north's dancing streamers relinquish their fire,
The sun's genial beams swell the bud on the tree,
And Enna chaunts forth her wild warblings with glee.

The Rein-deer, unharnessed, in freedom shall play,
And safely o'er Odon's steep precipice stray;
The wolf to the forest's recesses shall fly,
And howl to the moon as she glides through the sky.

Then haste, my fair Luah, oh! haste to the grove,
And pass the sweet season in rapture and love;
In youth let our bosoms in extacy glow,
For the winter of life ne'er a transport can know.

Thus does Providence, who always finds a substitute where full enjoyment is denied, unfold a ray of contentment to the heart of the Laplander. Happy would it be for more polished society, if, in the midst of their entertainments they could meet with the same consolation! If the native of Lapland possesses not his flocks and his herds, if he sees not around him vallies smiling with corn, nor his rich pastures and fine meadows, of this at least he is certain, that he has no occasion for them. Thomson, after describing the "martial hordes" of the north, beautifully contrasts with these the simple and uncorrupted manners of this rude but harmless people:

"Not such the sons of Lapland: wisely they
Despise th' insensate barbarous trade of war;

They ask no more than simple nature gives,
They love their mountains, and enjoy their storms.
No false desires, no pride-created wants,
Disturb the peaceful current of their time;
And thro' the restless ever-tortured maze,
Of pleasure or ambition, bid it rage.
Their Rein-deer form their riches: these their tents
Their robes, their beds, and all their homely wealth,
Supply, their wholesome fare and cheerful cups:
Obsequious at their call, the docile tribe
Yield to the sledge their necks, and whirl them swift
O'er hill and dale, heap'd into one expanse
Of marbled snow, as far as eye can sweep,
With the blue crust of ice unbounded glaz'd."

There is a breed betwixt the wild buck Rein-deer and the tame doe, called by the Laplanders *Kaffaigiar*, which is of considerable use in long journies, being much taller and more strong than the tame ones. These, however, retain much natural wildness, and often prove refractory. They sometimes not only refuse to obey their master, but turn against him, and strike at him so furiously with their feet, that his only resource is to cover himself with his sledge, on which the enraged animal vents its fury. The tame Deer, on the contrary, are mild, active, and submissive.*

The Rein-deer are able to swim with such incredible force and swiftness across the widest rivers, that a boat with oars can scarcely keep pace with them. They swim with their bodies half above water, and will pass a river or a lake even in the coldest weather.

In Siberia, where they are extremely numerous,

* Scheffer, 325.

they meet with a more rough and savage usage than their fellows experience from the harmless Laplanders. In the woody districts, where springes, fire-arms, and spring-guns can be applied, the natives resort to such for either the taking or killing of this harmless animal: but in open plains, where these contrivances would fail, many other means have been invented. Those adopted by the Samoydes seem the most uncommon.

These people go out in parties for the purpose of killing Rein-deer, and when they perceive a herd, they station the tame Rein-deer that they bring with them on an elevated plain to the windward. Then, from this place to as near the savage herd as they can venture to come without alarming them, they put into the snow long sticks, at small distances, and to each of them tie a goose's wing, which flutters about freely with the wind. This being done, they plant similar sticks and pinions on the other side, under the wind; and the Rein-deer, being busy with their pasture under the snow, and being chiefly guided by their scent, generally observe nothing of these preparations. When every thing is prepared, the hunters separate; some hide themselves behind their snowy entrenchments, while others lie with bows and other weapons in the open air to the leeward, and others again go to a distance, and drive, by a circuitous route, the game between the terrific pinions. Scared by these, the wild Rein-deer run directly to the tame ones, which are standing with the sledges; but here they are alarmed by the concealed hunters, who drive them to their companions

that are provided with arms, and these immediately commit terrible slaughter among them.

If it happen that a savage herd are feeding near a mountain, the hunters hang up all their clothes on stakes about the foot of the mountain, making also with the same frightful pinions, a broad passage towards it, into which they drive the game. As soon as they are come into this path, the women go with their sledges directly across the farther end of it, shutting the Rein-deer in, who immediately run round the mountain, and at every turn are saluted by a shot from the hunters.

On these occasions it is necessary that a number of people should be present. The Samoydes, therefore, have recourse to other inventions to deceive the caution of these animals. The marksman, for example, goes, clad in Rein-deer skins, stooping in the middle of five or six Rein-deer trained for the purpose, which he leads by a rope fastened to his girdle, and he is by this means enabled to approach very near to the wild herd without being betrayed.

In autumn, which is the rutting season, the hunters pick out a strong and vigorous buck from their droves, to whose antlers they tie nooses, and then turn him loose among the wild herd. The wild Stag, on observing a strange rival, immediately rushes on to fight him. During the combat, he so entangles his antlers in the loops, that, when he descries the hunter, and strives to escape, the tame Buck strikes his head to the ground, and there pins his antagonist fast till the marksman can kill him.*

* Tooke.

All persons who have described the Rein-deer, have taken notice of a cracking noise which they make when they move their legs. This has been attributed to the animals separating and afterwards bringing together the divisions of their hoofs; which, as they inhabit a country generally covered with snow, is, therefore, most admirably adapted to the surface they have most commonly to tread.

The under part is entirely covered with hair, in the same manner that the claw of the Ptarmigan is with feathery bristles, which is almost the only bird that can endure the rigour of the same climate.

The hoofs, however, are not only thus protected, but the same necessity which obliges the Laplanders to use snow shoes, makes the extraordinary width of the Reins' hoofs to be equally convenient in passing over snow, as it prevents their sinking too deep, which they would be subject to eternally, did the weight of their body rest only on a small point. This quadruped has, therefore, an instinct to use a hoof of such a form in a still more advantageous manner, by separating it when the foot is to touch the ground, so as to cover a larger surface of snow.—The instant, however, that the leg of the animal is raised, the width of the foot becomes inconvenient, especially when the Rein is going against the wind; the hoof, therefore, is then immediately contracted, and the collision of the parts occasions the snapping which is heard upon every motion of the animal.*

Pontoppidan tells us, that " the Rein-deer has

* Barrington's Miscellanies.

over his eye-lids a kind of skin, through which he peeps, when otherwise, in hard showers of snow, he would be obliged to shut his eyes entirely."* This writer, however, seems to have mistaken this for, probably, a breathing-hole, somewhat similar to that near the eye of the Fallow-deer, and some of the species of Antelope.

The Rein-deer cast their horns annually. The rudiments of the new horns are at first covered with a kind of woolly membrane, which the creature, after some time, rubs off. They also change their hair every spring, during which time they are very lean, and of little use.†

The female begins to breed at the age of two years, goes with young eight months, and generally brings forth two at a time. The fondness of the dam for her offspring is very remarkable. They follow her two or three years, but do not acquire their full strength until four. It is at this age that they are trained to labour; and they continue serviceable for four or five years. They very seldom outlive the age of fifteen or sixteen.

Rein-deer were formerly unknown in Iceland, but by order of governor Thodal, thirteen head were sent over from Norway in the year 1770, of which ten died from want of proper attention before they reached the place. The three remaining ones throve extremely well, and in the first two years had several fawns. They have there their proper food, for Iceland abounds with all those mosses, to which these animals bear so great a partiality.‡

* Pontoppidan, part 2. p. 11. † Crantz, i. 71. ‡ Von Troil, 141.

Sir Henry George Liddell, bart. brought with him from Lapland in the year 1786, five Rein-deer to England, which he kept at his seat of Eslington-castle in Northumberland. They bred, and there was every prospect that they would succeed, and even become prolific ;* but, unfortunately, some of them were killed, and the others died in consequence of a disorder similar to that called the *rot* in sheep, supposed to have been occasioned by the richness of the grass on which they were fed.†

THE STAG.‡

The elegance and beauty of this animal have always obtained for it much admiration. It is a native of many parts of Europe, and is supposed to have been originally introduced into this country from France. It was, however, about a century back, to be met in a state of nature in many of the wild and mountainous parts of Wales. Leland, speaking of the mountains about Snowdon, says, "In them ys very little corne, except oats in some places, and a litle barley, but scantly rye : if there were, the *Deer would destroy it :*" And we are informed that Stags are sometimes seen in a wild state, even now, in the highlands of Scotland.

They live in herds of many females and their young, headed by one male. These frequent the

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* Consett, 152. † Bew. Quad. 120.

‡ SYNONYMS.—Cervus elaphus. *Linn.*—Cerf, Biche, et Faon. *Buff.*—Red Deer, Hart, or Stag. *Penn.*——*Shaw's Gen. Zool.* ii. *tab*, 177.——*Bew. Quad. p.* 122.

forests, brouzing on grass, or the leaves and buds of various trees.

The males only have horns, and these are always shed in the spring. During the first year, the young animals have no horns, but only a rough excrescence in the place of them, covered with a thin hairy skin. In their second year the horns are strait, and without branches; the following year they acquire two antlers, or branches; and they generally have an additional one every year till their sixth, from which time the animals may be considered at maturity.—When the stag sheds his horns, he seeks the most retired places, and feeds only during the night; for otherwise the flies settle on the soft skin of the young horns, which is exquisitely tender, and keep the animal in continual torture. The place of the horn is for a little time occupied by a soft tumour, full of blood, and (as in others of the same genus) covered with a downy substance, like velvet. This increases daily, and, at length, the antlers shoot out: from this time a few days completes the whole.

The senses of smelling and hearing are in this animal remarkably acute. On the slightest alarm he lifts his head and erects his ears, standing for a few minutes as if in a listening posture. Whenever he ventures upon unknown ground, or quits his native coverts, he first stops at the skirts of the plain to examine all around; he next turns against the wind, to examine by the smell if there be any enemy approaching. If a person happens to whistle or call out at a distance, the Stag is seen to stop short, in his slow measured pace, and gaze upon the stranger

with a kind of awkward admiration: if the cunning animal perceives neither dogs nor fire-arms preparing against him, he goes slowly forward, unconcerned, and does not attempt to run away. Man is not the enemy he is most afraid of; on the contrary, he seems to be delighted with the sound of the shepherd's pipe; and the hunters sometimes make use of that instrument to allure the animal to its destruction.

When a herd of Stags have to pass a pretty wide river, which they are able to do without much difficulty, they are said to rest their heads on each others rumps. When the leader is fatigued, he retreats to the rear, and suffers the next in succession to take his place. They swim with so much ease, that a male has been known to venture out to sea in search of females, and to cross from one island to another, although at a distance of some leagues.*

The Stag is very delicate in the choice of his pasture. When he has eaten a sufficiency, he retires to the covert of some thicket to chew the cud in security. His rumination, however, seems performed with much greater difficulty than that of the cow or sheep; for the grass is not returned from the first stomach without much straining, and a kind of hiccup, which is easily perceived during the whole time it continues. This may proceed from the greater length of his neck, and the narrowness of the passage, all the cow and sheep kind having theirs much wider.

* Pontoppidan, part 2, p. 9.——Church.

This animal's voice becomes stronger, louder, and more tremulous as he advances in age; and, during the rutting time, it is even terrible. At this season he seems so transported with passion, that nothing can obstruct his fury; and, when at bay, he keeps off the dogs with great intrepidity. Some years ago the Duke of Cumberland caused a Tiger and a Stag to be inclosed in the same area; and the Stag made so bold and furious a defence, that the Tiger was at last obliged to give up the contest.

The natives of Louisiana hunt these animals both for food, and as an amusement. This is sometimes done in companies, and sometimes alone. The hunter, who goes out alone, furnishes himself with the dried head of a Stag, having part of the skin of the neck attached to it. This, a gun, and a branch of a tree, or piece of a bush, are all that he has need of. When he comes near any of the wild Deer, hiding himself behind the bush, which he carries in his hand, he approaches very gently till he is within shot. If the animal appears alarmed, the hunter immediately counterfeits the Deers' call to each other, and holds the head just above the bush; then lowering it towards the ground, and lifting it by turns, he so deceives the Stag with the appearance of a companion, that he seldom fails to come towards it, in which case the hunter fires into the hollow of his shoulder, and lays him dead on the spot.

When they go in large parties, they form a wide crescent round one of these animals, the points of which may be half a mile asunder. Some of them approach towards the animal, which runs, affrighted,

to the other side, where, finding them on that part advancing, he immediately rushes back again. Thus he is driven from side to side, the crescent closing into a circle, and gradually approaching, till at length he is so much exhausted as no longer to be able to stand against them, but quietly submits to be taken alive. It sometimes happens, however, that he has sufficient strength left to stand at bay, in which case he is seized from behind, but seldom in this case before some one is wounded. This mode of hunting is merely adopted as a recreation, and is called "the dance of the Deer."*

We have a most animated description of the hunting of this beautiful animal in our own island: a pursuit that reflects disgrace on a country, which boasts over the world its civilization and humanity. For the untutored Indian of America we may plead the want of knowing better, but we have not the same apology to make for an Englishman and a Christian.

The Stag, too, singled from the herd, where long
He rang'd, the branching monarch of the shades,
Before the tempest drives. At first, in speed
He, sprightly, puts his faith; and, rous'd by fear,
Gives all his swift, aërial soul to flight.
Against the breeze he darts, that way the more
To leave the lessening murderous cry behind.
Deception short! though fleeter than the winds
Blown o'er the keen air'd mountains by the north,
He bursts the thickets, glances through the glades,
And plunges deep into the wildest wood.
If slow, yet sure adhesive to the track,
Hot streaming, up behind him come again

* Du Pratz, 256.

Th' inhuman route, and from the shady depth
Expel him, circling through his ev'ry shift.
He sweeps the forest oft; and sobbing sees
The glades, mild opening to the golden day;
Where in kind contest, with his butting friends
He wont to struggle, or his loves enjoy.
Oft in the full-descending flood he tries
To lose the scent, and lave his burning sides;
Oft seeks the herd; the watchful herd, alarm'd,
With selfish care avoid a brother's woe.
What shall he do? His once so vivid nerves,
So full of buoyant spirit, now no more
Inspire the course; but fainting breathless toil,
Sick, seizes on his heart; he stands at bay;
And puts his last, weak refuge, in despair.
The big round tears run down his dappled face;
He groans in anguish; while the growling pack,
Blood-happy, hang at his fair-jutting chest,
And mark his beauteous chequer'd sides with gore.

The Highland Chiefs of former days used to hunt these animals with all the magnificence of Eastern monarchs. They sometimes assembled four or five thousand of their clan, who drove the Deer into toils, or to the station where the lairds had placed themselves: but, as this was frequently made only a pretence to collect their vassals for rebellious purposes, an act of parliament was passed, which prohibited any assemblages of this nature.*

Much has frequently been said of the extreme long life of the Stag, and many wonderful stories have been related by naturalists respecting it; but there is great reason for supposing that it does not often reach the age of fifty years.

The females generally bring forth only one young

* Penn. Brit. Zool. i. 45.

one at a time, and this about the latter end of May or beginning of June. They take care to hide their young in the most obscure thickets, for almost every creature is then a formidable enemy: the Eagle, the Falcon, the Osprey, the Wolf, the Dog, and all the rapacious family of the Cat-kind, are in continual employment to find out the retreat. But, what seems most unnatural, the Stag himself is a professed enemy, and the female is obliged to use all her arts to conceal her young one from him, as from the most dangerous of her pursuers. At this season, therefore, the courage of the male seems transferred to the female; she defends it against her less formidable opponents by force; and, when pursued by the hunter, she even offers herself, to mislead him from the principal object of her concern: she will fly before the hounds for many hours, and will then return to her young, whose life she has thus preserved at the hazard of her own.

The flesh of the Stag is a palatable food, and the skin is serviceable for various purposes. The horns, when full grown, are solid, and used for the making of knife-handles, &c. From these the salt of harts-horn is extracted.

The greatest known weight of a British Stag was three hundred and fourteen pounds, exclusive of the entrails, head, and skin.

THE FALLOW DEER.*

The Fallow Deer is smaller than the Stag, of a

* SYNONYMS.—Cervus Dama. *Linn.*—Dama et Dein. *Buff.*—Fallow Deer. *Penn.*——*Shaw's Gen. Zool.* ii. *tab.* 178. 179.—*Bew. Quad.* *p.* 129.

brownish bay colour, whitish beneath, on the insides of the limbs, and beneath the tail. The horns, which are peculiar to the male, are very different from those of the stag: they are not branched, but are broader towards the upper part, and divided into processes down the outside. A simple antler rises from the base of each, and a similar one at some distance from the first. In its general form the Fallow Deer greatly resembles the Stag.

These animals associate in herds, which sometimes divide into two parties, and maintain obstinate battles for the possession of some favourite part of the park: each party has its leader, which is always the oldest and strongest of the flock. They attack in regular order of battle: they fight with courage, and mutually support each other; they retire, they rally, and seldom give up after one defeat. The combat is frequently renewed for several days together; till, after several defeats, the weaker party is obliged to give way, and leave the conquerors in possession of the object of their contention.

The Fallow Deer is easily tamed, and feeds upon a variety of vegetables which the Stag refuses. The female goes with young eight months, and produces one, sometimes two, and rarely three, at a time. These arrive at perfection in three years, and live to about the a geof twenty.—When these animals drink, they plunge their noses, like some horses, very deep under water, and continue them in that situation for a considerable time; but, to obviate any inconvenience, says that observing naturalist, Mr. White, in his Natural History of Selborne,

they can open two vents, one at the inner corner of each eye, which have a communication with the nose. Here seems to be an extraordinary provision of nature worthy of our attention; for it appears as if these creatures would not be suffocated, though both their mouths and nostrils were stopped. This curious formation of the head may be of singular service to beasts of chase, by affording them free respiration: and no doubt these additional nostrils are thrown open when they are hard run.

To this account, which was addressed in a letter to Mr. Pennant, that gentleman has thus replied: "I was much surprised to find in the *Antelope* something analogous to what you mention as so remarkable in Deer. This animal also has a long slit beneath each eye, which can be opened and shut at pleasure. On holding an orange to one, the creature made the same use of those orifices as of his nostrils; applying them to the fruit, and seeming to smell it through them."

THE ROE.*

The Roe is one of the smallest animals of this genus, being only about four feet long, and two and a half in height, and weighing from fifty to sixty pounds. In summer the hair is short and smooth, dark grey at the roots, and deep red at the ends: in winter it becomes very long, and, except on the back, where it is often very dark coloured, it is hoary

* Synonyms.—Cervus Capreolus *Linn.*—Chevreuil et Chevrette. *Buff.*—Roe, or Roebuck. *Penn.*——*Penn. Brit. Zool.* i. *tab.* 4.—*Bew. Quad.* p. 132.

at the ends. The legs are very slender, and on the hind ones there is a tuft of hair below the first joint. The face is blackish, but the belly and the inside of the limbs are in general of a yellowish white. The horns are eight or nine inches long, upright, round, and divided only into three branches: these are cast in the autumn, and recovered during winter.

These animals inhabit woody and mountainous districts in Europe and Asia, and, according to Charlevoix, in America. They were formerly common in many parts of Britain, but at present what few we have are confined to the highlands of Scotland, where they frequent the pine forests about the mountains, and exist through the winter on the shoots of these trees and the beech. In summer they feed on grass, and are very fond of the stone bramble,* called in the highlands the Roebuck-berry.

They are active and shy animals, herding in small flocks or families, and not in such numbers as are generally seen together of the others of the Deer-tribe. They are so delicate as not to be able to sustain a great degree of cold.

When taken early they are easily rendered tame, and in this state they appear naturally fond of mankind.†

The female brings two fawns at a birth, and these generally in the month of April. She is, while they are very young, obliged to conceal them from the

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* Rubus Saxatilis of Linnæus. † Penn's Brit. Zool. i. 49.—Kerr, i. 302.

buck, who otherwise would kill them. It is said that in America the tame female retires into the woods to bring forth, where she remains some days with her young, and then returns to shew herself to her owners. She constantly visits them; and, when they are supposed to be old enough, the master or his servant follows her to the retreat, and brings them away, from which time they are reared by the dam at home.*

The Roes never become very fat, but their flesh is reckoned delicate venison.

GIRAFFE.

IN this genus, of which but one species, and this consisting only of a single individual, is known, the horns are simple, covered with skin, blunt at the ends, and each terminated with a tuft of black hair. It has eight broad and thin front-teeth in the lower-jaw, the outermost of which on each side are deeply divided into two lobes.

This animal, although nearly allied both to the Deer and Antelope tribes, is so singular in its structure, as, in an artificial system at least, to require a distinct classification.

* Charlevoix, i. 206.

THE GIRAFFE.*

This extremely singular quadruped is never met with in a wild state but in the interior parts of Africa, and even there it has been but seldom seen by European travellers. Its head bears a considerable resemblance to that of the Horse, but is furnished with erect horns, (covered with a hairy skin) about six inches long: these are blunt, as though cut off at the ends, and tufted each with a brush of coarse black hairs. The neck is very long, thin, and erect, and has on the ridge a short erect mane, which extends along the back nearly to the origin of the tail. The shoulders are very deep, which has given rise to the vulgar error that the fore-legs are longer than the hinder-ones, a circumstance that proves on examination to be by no means true. When they stand with their head and neck perfectly erect, many of the Giraffes measure sixteen or eighteen feet, from the hoof to the end of the horns. In their native wilds their singular form gives them, at a distance, the appearance of decayed trees, and this is not a little aided by their colour, which is a reddish white, marked with numerous large rusty spots.

They are of a mild and timid disposition. When pursued, they trot so fast, that even a good horse is scarcely able to keep pace with them, and they continue their course for a long time without requiring rest. When they leap, they lift first the fore-legs,

* SYNONYMS.—Camelopardalis Giraffa. *Linn.*—Camelopardalis, or Camelopard. *Var.*—Giraffe. *Buffon.*——*Shaw's Gen. Zool.* ii. *tab.* 181. 182.

and then the hinder ones, in the manner of a Horse whose fore-legs are tied together. Their general position, except when grazing, is with the head and neck erect. They feed principally on the leaves of trees, and particularly on those of a peculiar species of Mimosa, common in the country where they are found, to which the extreme length of their legs and neck admirably adapt them. When they feed from the ground, they are under the necessity of dividing their fore-legs to a considerable distance. In preparing to lie down, they kneel like the Camel.

It has been generally supposed that the Giraffe possessed neither the power nor the strength to defend itself against the attacks of other animals: this, however, seems to be unfounded, for M. le Vaillant has asserted, that "by its kicks it frequently wearies, discourages, and distances even the Lion." The utility of the horns appears to be hitherto unknown; this writer says, that they are not used as weapons of defence.*

The Giraffe is never seen near the coasts of Africa, confining itself entirely to the internal recesses of the forests, from whence it is never taken alive but when young. From divers accounts that have been left to us, it seems to have been known to the ancients. Heliodorus, the Greek bishop of Sicca, mentions it particularly in his time, and his description seems more original and authentic than those of most of the old writers.

"The ambassadors from the Axiomitæ (he says)

* Travels in Africa.

brought presents to Hydaspes, and, among other things, there was an animal of a strange and wonderful species, about the size of a Camel, and marked upon the skin with florid spots. The hinder parts, from the loins, were low, like those of a Lion; but the shoulders, fore-feet, and breast, were elevated above proportion to the other parts. The neck was small, and lengthened out from its large body like that of a Swan. The head, in form, resembled a Camel, but was, in size, about twice that of the Lybian Struthium, (Ostrich) and it rolled the eyes which had a film over them, very frightfully.

"It differs in its gait from every other land or water animal, waddling in a contrary manner. Each leg does not move alternately, but those on the right side move together, independently of the other, and those of the left in the same manner, so that each side is alternately elevated. It is so tractable as to be led by a small string fastened to the head, by which the keeper conducts it as he pleases, as if with the strongest chain. When this animal appeared, it struck the whole multitude with terror; and took its name from the principal parts of its body, being called by the people, extempore, Camelopardalis."

Ferdinand, a Jesuit, reports of one of these animals, that a man on horseback can pass upright under its belly: "tam vastum animal, ut eques rectus sub ejus dorso transire possit!"*

A Giraffe appears to have been brought to Cairo

* Observations on a subject of Natural History. 4to. Lond. 1792.

tribe, which they resemble in their horns, but they are now properly separated into an intermediate genus betwixt the Goats and the Deer.—In general their flesh is eatable, though in some species it has a musky flavour.

THE CHAMOIS.*

The Chamois is an inhabitant of the Alps and the Pyrenees: it is about the size of the common Goat, is of a dusky yellowish-brown, with the cheeks, chin, throat, and belly of a yellowish white. The horns are slender, upright, about eight inches high, and hooked backwards at their tips: their colour is black. At the back part of the base of each horn, there is said to be a pretty large orifice in the skin, the nature and use of which does not yet seem to be clearly understood. The hair is rather long, and the tail short, and of a blackish colour. The eyes are round, sparkling, and full of animation.

These animals are found in flocks of from four to eighty, and even a hundred, dispersed upon the crags of the mountains. They do not feed indiscriminately, but only on the most delicate herbage they can find.

Their sight is very penetrating, and their senses of smelling and hearing remarkably acute. When the wind blows in a proper direction they are said

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* Synonyms.—Antilope rupicapra. *Linn.*—Chamois Goat. *Bewick.* Chamois. *Buffon. Penn.*——*Shaw's Gen. Zool. ii. tab.* 187—*Bew. Quad. p.* 71.

to be able to scent a man at the distance of a mile or upwards.

The voice somewhat resembles that of a hoarse Domestic Goat: by means of this they are called together. When alarmed they adopt a different noise, and advertize each other by a kind of whistle. This the animal on watch continues as long as he can blow without taking breath: it is at first sharp, but flattens towards the conclusion. He then stops for a moment, looks round on all sides, and begins whistling afresh, which he continues from time to time. This is done with such force, that the rocks and forests re-echo the sound. His agitation is extreme. He strikes the earth with his feet. He leaps upon the highest stones he can find: again looks round, leaps from one place to another, and, when he discovers any thing seriously alarming, he flies off. This whistling is performed through the nostrils, and consists of a strong blowing, similar to the sound which a man may make by fixing his tongue to the palate, with his teeth nearly shut, his lips open, and somewhat extended, and blowing long, and with great force.

The Chamois scramble among the inaccessible rocks of the country they inhabit with great agility. They neither ascend nor descend perpendicularly, but always in an oblique direction. When descending, in particular, they will throw themselves down across a rock, which is nearly perpendicular, and of twenty or thirty feet in height, without having a single prop to support their feet. In descending, they strike their feet three or four times

against the rock, till they arrive at a proper resting place below. The spring of their tendons is so great, that, when leaping about among the precipices, one would almost imagine that they possessed wings instead of limbs.

They are hunted during the winter for their skins, which are very useful in manufactures; and for the flesh, which is good eating. Their chace is a laborious employment, as much care is necessary in order to get near them. They are shot with rifle-barrelled guns.—They generally produce two young ones at a birth; and are said to be long-lived.

THE NYL-GHAU.*

The height of the Nyl-ghau is somewhat more than four feet at the shoulder. The male is of a dark grey colour, and furnished with short blunt horns that bend a little forward. There are white spots on the neck, between the fore-legs, on each side behind the shoulder joints, and on each fore-foot. The female, which is destitute of horns, is of a pale brown colour, with two white and three black bars on the fore part of each foot, immediately above the hoofs. On the neck and part of the back of each is a short mane; and the fore-part of the throat has a long tuft of black hairs. The tail is long, and tufted at the end.

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* SYNONYMS.—Antilope picta. *Linn.*—White-footed Antelope. *Penn.*—Nyl-ghau, which, in Persian, signifies a blue Cow or Bull.—*Shaw's Gen. Zool. ii. tab.* 189.—*Bew. Quad. p.* 100.

In the Philosophical Transactions we have an accurate account of this animal by Dr. Hunter. He says "that although the Nyl-ghau is usually reported to be exceedingly vicious, yet the one he had the care of was very gentle. It seemed pleased with every kind of familiarity, always licked the hand, which either stroked it, or gave it bread, and never once attempted to use its horns offensively. It seemed to have much dependence on the organs of smell, and snuffed keenly, and with considerable noise, whenever any person came within sight. It did the same when any food or drink was brought to it; and was so easily offended with an uncommon smell, or was so cautious, that it would not taste bread that was offered with a hand that had touched oil of turpentine or spirits.

"Its manner of fighting was very particular: this was observed at Lord Clive's, where two males were put into a little inclosure; and it was thus related by his lordship:—while they were at a considerable distance from each other they prepared for the attack by falling down upon their fore-knees, and when they were come within some yards, they made a spring, and darted against each other."

At the time that two of them were in his stable, Dr. Hunter observed this particularity, that whenever any attempt was made on them, they immediately fell down upon their fore-knees; and sometimes they would do so when he came before them: but as they never darted he so little supposed this

to be a hostile posture, that he rather supposed it expressive of a timid or obsequious humility.

The intrepidity and force with which they dart against any object may be conceived from an anecdote that has been related of the finest and largest of these animals that has ever been seen in England. A poor labouring man, without knowing that the animal was near him, and therefore neither meaning to offend, nor suspecting the danger, came up to the outside of the pales of the inclosure where it was kept; the Nyl-ghau, with the swiftness of lightning, darted against the wood-work with such violence that he shattered it to pieces, and broke off one of his horns close to the root. This violence was supposed to occasion his death, which happened not long after. From this it appears, that at certain seasons the animal is vicious and fierce, however gentle it may be at other times.

The first of this species that were brought into England were a male and female, sent from Bombay as a present to Lord Clive in 1767. They bred every year. Afterwards two others were sent over and presented to her Majesty by Mr. Sullivan. These were the two above described.

They are uncommon in all the parts of India where we have settlements, those that are found there having been brought from the distant interior parts of the country.

Bernier mentions them in his travels from Delhi to the province of Cachemire. He desribes the emperor's amusement of hunting them, and says that sometimes great numbers of them are killed;

which proves them to be in sufficient plenty about their native habitations. In several parts of the east they are looked upon as royal game, and are only hunted by the princes.*

THE SCYTHIAN ANTELOPE.†

The Scythian Antelope is about the size of the Fallow Deer, and of a grey yellowish colour. The horns are annulated, distant at the base, and have three curvatures, the last of which points inward: their length is about a foot. The head is rather large, and the nose much arched and thick. The ears are small, and the neck slender. The tail is about four inches long: naked below, cloathed above with upright hairs, and ending in a tuft. The females are without horns.

These animals are found in several of the dreary open deserts of the Continent, about Mount Caucasus, the Caspian Sea, and in Siberia. They chiefly confine themselves to countries where there are salt-springs, for on the plants that grow near them, and on salt they principally feed. While feeding they frequently walk backwards, and pluck the grass on each side. They are migratory, collecting in autumn in flocks, consisting of some thousands, and retiring into the southern deserts. In spring they divide again into little flocks, and return to the north.

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* Phil. Tran. vol. 61. p. 170.—Bernier's Travels.—Penn. Outl. vol. ii. p. 242.

† SYNONYMS.—Antilope Saiga. *Linn.*—Saiga. *Buffon. Shaw.*—Scythian Antelope. *Penn.*

It seldom happens that a whole flock lies down to rest all at the same time, but some are always on their legs keeping watch. When these are tired they give a kind of notice to such as have taken their rest, who instantly rise, and, as it were, relieve the centinels of the preceding hours. By this means they often preserve themselves from the attacks of the Wolves, and the insidious stratagems of the hunters. They are so swift that they are able to out-run the fleetest Horse or Greyhound: yet such is their extreme timidity and shortness of breath, that they are very soon taken. If they are but bitten by a Dog they instantly fall down, and will not again attempt to rise. In running they seem to incline on one side; and their fleetness is for a short time so astonishing that their feet appear scarcely to touch the ground. From the heat of the sun, and the reflection of its rays from the sandy plains which they frequent, they become in summer almost blind, which is another cause of their destruction. In a wild state they seem to have no voice, but when brought up tame the young emit a sort of bleating, like Sheep.

The females bring forth only one young one at a time, and this in the month of May. The young are easily domesticated: but the old ones, when taken, are so wild and timid as to refuse food entirely.

Their flesh is sometimes eaten, but its taste is to most people very rank and disagreeable. The horns and skins are of considerable use in trade.*

* Penn. Quad. i. 87.—Kerr. i. 310.

THE WHITE-FACED ANTELOPE.*

This species, which is found in the countries north of the Cape of Good Hope, is about five feet and a half in length, and three feet high at the shoulder. The horns are about sixteen inches long, bending outwards in the middle, and approaching at the points, so as somewhat to resemble the ancient lyre. Those of the females are smooth, whilst the horns of the males have six or seven rings towards their lower part. The general colour of the animal is a hoary red, with a bright bay neck, a deep red band along the sides, white buttocks, and a white face. The legs are slender.

Infinite mischief is done by these animals in the corn-fields in many parts of South Africa. They often descend in troops, and have so much sagacity, as not to be caught either in snares or by spring-guns; and the only mode the inhabitants have of destroying them is, when in the act of devouring the corn, to shoot them with rifle-barrelled guns. In this work great care is necessary: a hole is dug in the field, in which a man can sit unseen, till some of the animals approach sufficiently near to be fired at. One part of the country has its name from these animals, which reside there in scattered herds; and in some years immense numbers migrate thither from the more remote tracts of the continent.†

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* Synonyms.—Antilope Pygarga. *Linn.*—Springboc. *Thunberg.*—Klipspringer. *Sparrman.*—Mountain Antelope. *Russel.*—White-faced Antelope. *Penn.*——*Berv. Quad. p.* 82.

† Thunberg, ii. 23.

They seem to have their emigrations at the expiration of a certain number of years (like the Lemmings, in the snowy regions of the north) arriving in enormous troops (Thunberg says of *millions*) and travelling in rows one after another, eating all the herbage wherever they pass, and suffering nothing to obstruct them in their march. If any of the females, while on their journey, bring forth their young, which sometimes happens, they always leave them behind. If any of the farmers fire amongst them, they nevertheless continue their route without interruption, and are now not to be intimidated by Lions or any other beasts of prey, who follow the herd and commit the most dreadful depredations among them. After they have passed through any farmer's grounds there is generally scarcely either food or water enough left to serve his cattle; and were the corn-fields not carefully watched both night and day, they would soon entirely devour the whole produce of the country.*

They do not, like some others of their tribe, reside either in the mountains or amongst thickets, but continue altogether in the open plains, where their extreme fleetness puts them out of the power of all but crafty enemies.

THE COMMON ANTELOPE.†

The Common Antelope is, in its size, somewhat

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* Thunberg, ii. 171.

† Synonyms.—AntilopeCervicapra. *Linn.*—LidmeeArabum. *Shaw's Trav.*—Lidmee, or Indian Antelope. *Smell. Buff.*—Common Antelope and Brown Antelope. *Penn.*——*Shaw's Gen. Zool. ii. tab.* 191.—*Bew. Quad. p.* 95.

smaller than the Fallow Deer. Its colour is a reddish tawny brown above, and below and on the insides of the limbs, white. The orbits of the eyes are also white. The horns, which are generally about fourteen inches long, and possessed only by the male, are extremely beautiful, having a double flexion, first inwards and then outwards: their colour is black, and they are marked with numerous prominent rings.

This creature loves the smoke of tobacco, and, when caught alive, will approach the pipe of the huntsman, though otherwise more timid than any animal. It is perhaps the only creature besides man that delights in the smell of this poisonous and stinking plant.

The Arabians hunt it with a Falcon.* "I had (says Hasselquist) an excellent opportunity of seeing this sport near Nazareth, in Galilee. An Arab, mounting a swift courser, held the Falcon on his hand, as huntsmen commonly do. When we espied the animal on the top of a mountain, he let loose the Falcon, which flew in a direct line, like an arrow, and attacked the Antelope, fixing the talons of one of his feet into its cheek, and those of the other into its throat, extending his wings obliquely over the animal; spreading one towards one of his ears, and the other to the opposite hip. The creature, thus attacked, made a leap twice the height of a man, and freed himself from the Falcon; but, being wounded, and losing both its

* Falco Gentilis of Linnæus.

strength and speed, it was again attacked by the bird, which fixed the talons of both his feet into its throat, and held it fast, till the huntsman coming up, took it alive, and cut its throat. The Falcon was allowed to drink the blood, as a reward for his labour, and a young Falcon, which was learning, was likewise put to the throat. By this means the young birds are taught to fix their talons in the throat of the animal, as the properest part; for, should the Falcon fix upon the creature's hip, or some other part of the body, the huntsman would not only lose his game, but his Falcon too; for the beast, roused by the wound, which could not prove mortal, would run to the deserts and the tops of the mountains, whither its enemy, keeping its hold, would be obliged to follow, and being separated from its master, must of course perish."*

Bell informs us, that in many parts of Persia the young Hawks are taught, by being fed on the stuffed skin of one of these Antelopes. He says further, that they are trained also to fly at Foxes and Wolves.†

THE GOAT TRIBE.

THE animals of the Goat kind live principally in retired mountainous situations, and have a rank

* Hasselquist, 190. † Bell, i. 74.

and unpleasant smell, especially the males. Although very timid and shy while they continue in a wild state, they are easily rendered domestic, and even familiar. They differ from sheep, not only in the erect position of their horns, and in being clothed with hair instead of wool, but also, when they fight, in rising on their hind-legs, and turning the head on one side to strike with the horns, for the Rams run full tilt at each other, with their heads down.—There were formerly no animals of this genus in America, but now they are in considerable plenty.

The horns are hollow, rough, and compressed: they rise somewhat erect from the top of the head, and bend backwards. In the lower-jaw are eight front-teeth, and in the upper none; and no canine-teeth in either. The chin is bearded.

THE COMMON GOAT.*

The Goat is found, in a domestic state, in most parts of the globe, being able to bear, without inconvenience, the extremes both of heat and cold. It is a lively, playful animal, and easily familiarized, being sensible of caresses, and capable of a considerable degree of attachment. His disposition, however, is extremely inconstant, which is marked by the irregularity of all his actions: he walks, stops short, runs, leaps, approaches or retires, shews or conceals himself, or flies off as if actuated by

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* SYNONYMS.—Capra Hircus. *Linn.*—Bouc et Chevre. *Buff.*—Domestic Goat. *Penn.*——*Shaw's Gen. Zool.* ii. *tab.* 199.—*Benv. Quad.* p. 67.

mere caprice, and without any other cause than what arises from the eccentric vivacity of his temper. In some instances these animals, from their extreme familiarity, have become troublesome.—"In the year 1698, (says the Count de Buffon) an English vessel having put into harbour at the island of Bonavista, two negroes went on board, and offered the captain as many goats as he chose to carry away; he expressed his surprise at this offer, when the negroes informed him that there were only twelve persons on the island, and that the goats multiplied so fast as to become exceedingly troublesome, for, instead of being difficult to catch, they followed them about with an unpleasant degree of obstinacy, like other domestic animals."

They love to feed on the tops of hills, and prefer the very elevated and rugged parts of mountains, finding sufficient nourishment in the most heathy and barren grounds. They are so active as to leap with ease, and the utmost security, among the most dreadful precipices; and even when two of them are yoked together, they will, as it were by mutual consent, take the most dangerous leaps together, and exert their efforts in such perfect unison, as generally to accomplish these unhurt.

In mountainous countries they render considerable service to mankind, the flesh of the old ones being salted as winter provision, and the milk being used in many places for the making of cheese. The flesh of the Kid is highly palatable and pleasant, being equal in flavour to the most delicate lamb. They require but little care or attention,

easily providing for themselves proper and sufficient food.

M. Sonnini, in his edition of the Comte de Buffon's Natural History, has given us a curious instance of the readiness with which the Goat will permit itself to be sucked by animals of a different kind and far larger size than itself: he assures us that he saw, in the year 1780, a Foal that had lost its mother thus nourished by a Goat, which was placed on a barrel, in order that the Foal might suck with greater convenience. The Foal followed its nurse to pasture, as it would have done its parent, and was attended with the greatest care by the Goat, which always called it back by her bleatings when it wandered to any distance from her.

Goats are exceedingly numerous in South Guinea, and some of the negroes there have an odd notion that their strong and offensive smell was given as a punishment to them for having requested of a certain female deity that they might be allowed to anoint themselves with a kind of aromatic ointment which she used herself. Offended at the request, they say, she took a box of a most nauseous compound, and rubbed their bodies with it, which had so powerful an effect, as to cause their unpleasant smell to continue ever afterwards!*

* Barbot. v. 215.

THE IBEX.*

The male Ibex is larger than the tame Goat, but resembles it much in appearance. The head, in proportion to the body, is small; the muzzle thick, and a little arched. The eyes are large, round, and brilliant. The horns are large, weighing sometimes sixteen or eighteen pounds, and measuring from two to four feet in length: they are flatted before, round behind, and divided by several transverse ridges; are bent backwards, and of a dusky brown colour. The beard is long, the legs slender, and the body short, thick, and strong. The tail is short, and naked beneath. The hair is long, and of a brownish or ash-colour, with a streak of black running along the back. The belly and thighs are of a delicate fawn-colour.

The female is one-third less than the male, and not so corpulent. Her colour is less tawny, and her horns not above eight inches long.

These animals assemble in flocks consisting of sometimes ten or fifteen, but generally of smaller numbers. They feed during the night in the highest woods: but at sun-rise they quit the woods, and go up the mountains, feeding in their progress, till they have reached the most considerable heights. They are generally seen on the sides of the mountains which face the east or south, and lie down in the highest places and hottest exposures: but when the sun is

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* Synonyms.—Capra Ibex. *Linn.*—Bouquetin, Bouc-estain, et Boucstein. *Buff.*—Rock Goat, or Wild Goat. *Smellie.*—Stein Bock. *Gesner.*—Ibex *Penn.*——*Shaw's Gen. Zool.* ii. *tab.* 198.—*Bew. Quad. p.* 70.

declining, they again begin to feed and to descend towards the woods; whither they also retire when it is likely to snow, and where they always pass the winter.

The males that are six years old and upwards, haunt more elevated places than the females and younger animals; and, as they advance in age, they become more inclined to solitude. They also become gradually hardened against the effects of extreme cold, and frequently live entirely alone.

The season for hunting the Ibex is during the months of August and September, when they are usually in good condition. None but the inhabitants of the mountains engage in this chace; for it not only requires a head that can bear to look down from the most tremendous heights without terror, address and sure-footedness in the most difficult and dangerous passes, but also much strength, vigour, and activity.

Two or three hunters usually associate in this perilous occupation: they are armed with rifle-barreled guns, and furnished with small bags of provisions; they erect a miserable hut of turf among the heights, where, without fire or covering, they pass the night; and, on waking in the morning, they not unfrequently find the entrance blocked up with snow three or four feet deep. Sometimes, in pursuit of this animal, being overtaken by darkness, amid crags and precipices, they are obliged to pass the whole night standing, and embraced together, in order to support each other, and to prevent themselves from sleeping.

As the animals ascend into the higher regions very early in the morning, it is necessary to gain the heights before them, otherwise they scent the hunter, and betake themselves to flight. It would then be in vain to follow them, for, when once they begin to escape, they never stop till they are entirely out of danger, and will even sometimes run for ten or twelve leagues before they rest.

Being very strong, when they are close pressed they sometimes turn upon the incautious huntsman, and tumble him down the precipices, unless he has time to lie down, and let the animal pass over him.* It is said also, that when they cannot otherwise avoid the hunter, they will sometimes throw themselves down the steepest precipices, and fall on their horns in such a manner as to escape unhurt. Certain it is, that they are often found with only one horn, the other being probably broken off in some fall. It is even pretended, that, to get out of the reach of huntsmen, they will hang by their horns over the precipices, by a projecting tree, and remain suspended till the danger is over.†

The Ibex will mount a perpendicular rock of fifteen feet at three leaps, or rather at three successive bounds, of five feet each. It does not seem as if he found any footing on the rock, appearing to touch it merely to be repelled, like an elastic substance striking against a hard body. He is not supposed to take more than three successive leaps in this manner. If he is between two rocks which are near

* Coxe. † Penn. Arct. Zool.

each other, and he wants to reach the top, he leaps from the side of one rock to the other alternately, till he has attained the summit. The fore-legs being considerably shorter than the hind ones, enables these animals to ascend with much more ease than to descend; and on this account it is that nothing but the severest weather will induce them to go down into the vallies.

Their voice is a short sharp whistle, not unlike that of the Chamois, but of less continuance: sometimes they make a snort, and, when young, they bleat.

The female, in general, brings forth only one young one at a time: to this she shews great attachment, and defends it even against the attacks of Wolves and Eagles. She sometimes takes refuge in a cavern, where, presenting her head at the entrance, she opposes the strongest enemy with great perseverance.

THE SHEEP TRIBE.

FEW animals render greater or more essential services to mankind than the Sheep. They supply us both with food and clothing; and the wool alone of the common Sheep affords in some countries an astonishing source of industry and wealth. They are very harmless animals, and, in general, exceedingly shy and timid. Both in running and leaping they exhibit much less activity than the

Goats. They collect, in a wild state, into small flocks ; and, though they do not altogether avoid the mountains, generally prefer dry open plains. They fight by butting against each other with their horns, and threaten by stamping on the ground with their feet. The female goes with young about five months, and usually produces one, sometimes two, and rarely three, at a birth.

There are, strictly speaking, but *two* different species of Sheep ; but of the common Sheep there are no fewer than ten or twelve very distinct varieties.

THE COMMON SHEEP.*

These highly useful animals are found in very few countries except in Europe and some of the temperate parts of Asia. They are singularly inoffensive and harmless even to a proverb. When enslaved by man, they tremble at the voice of the Shepherd or his Dog ; but, on the extensive mountains where they range, almost without controul, and where they seldom depend on the aid of the shepherd, they assume a very different mode of behaviour. In these situations a Ram or a Wedder will boldly attack a single Dog, and often come off victorious : but, when the danger is more alarming, they have recourse to the collected strength of the whole flock. On such occasions they draw up into a complete body, placing the young, and females, in the centre, whilst the males take the foremost ranks, keeping

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* SYNONYMS.—Ovis Aries. *Linn.*—Brebis et Belier. *Buff.*—Ram and Common Sheep. *Penn.*

close by each other. Thus an armed front is presented on all quarters, that cannot easily be attacked without danger of destruction to the assailant. In this manner they wait with firmness the approach of the enemy; nor does their courage fail them in the moment of attack; for, when the aggressor advances within a few yards of the line, the Rams dart upon him with such impetuosity as to lay him dead at their feet, unless he judiciously saves himself by timely flight. Against the attacks of single Dogs or foxes, when in this situation, they are perfectly secure.—A single Ram, regardless of danger, will often engage a Bull; and, his forehead being much harder than that of any other animal, he seldom fails to conquer; for the Bull, by lowering his head, receives the stroke of the Ram between his eyes, which usually brings him to the ground.

The Sheep, in the mountainous parts of Wales, where the liberty they enjoy is so great as to render them very wild, do not always collect into large flocks, but sometimes graze in parties of from eight to a dozen, of which one is stationed at a distance from the rest, to give notice of the approach of danger. When the centinel observes any one advancing, at the distance of two or three hundred yards, he turns his face to the enemy, keeping a watchful eye upon his motions, allowing him to approach as near as eighty or a hundred yards; but, when the suspected foe manifests a design of coming nearer, the watchful guard alarms his comrades by a loud hiss or whistle, twice or thrice repeated, when the whole party instantly scour away with great agi-

lity, always seeking the steepest and most inaccessible parts of the mountains.

It is very singular that in the Holms round Kirkwall, in the island of Mainland, one of the Orkneys, if any person about the lambing time enters with a Dog, or even without, the Ewes suddenly take fright, and, through the influence of fear, it is imagined, instantly drop down dead, as though their brain had been pierced with a musket-ball.—Those that die in this manner are commonly said to have two, and sometimes three lambs within them.*

No country produces finer Sheep than Great Britain; and their fleeces are large, and well adapted to the various purposes of clothing. Of these, the Sheep that are bred in Lincolnshire, and the northern counties, are most remarkable for their size, and the quantity of wool which they bear.—In other parts of England they are generally smaller, and in the mountainous districts of Wales and Scotland are very small.

Besides the fleece, there is scarcely any part of this animal but what is useful to mankind. The flesh is a delicate and wholesome food. The skin, dressed, forms different parts of our apparel; and is used for the covers of books. The entrails, properly prepared and twisted, serve for strings to various musical instruments. The bones, calcined, form materials for tests for the refiner. The milk is thicker than that of Cows, and consequently yields a greater quantity of butter and cheese; and

* Statistical Account of Scotland.

in some places it is even so rich, as not to produce the cheese without a mixture of water to make it part from the whey.*

The fleeces of the Sheep above Cairo are very thick and long. The skins are used by most of the Egyptians for beds, since, besides their being very soft, it is said that in sleeping on them persons are secured from the stings of Scorpions, which never venture upon wool lest they should be entangled in it. These fleeces are, (as at present is done in some parts of England,) taken off entire, and one of them, long and broad enough to serve a man as a mattrass, was sold as high as twenty shillings sterling, while the whole animal alive and without its fleece, only brought about six shillings.†

The disposition and actions of these useful creatures, while washing and shearing, Thomson has beautifully described:

> Urg'd to the giddy brink, much is the toil,
> The clamour much of men, and boys, and dogs,
> E're the soft, fearful people to the flood
> Commit their woolly sides—
>
> ——Then, as they spread
> Their swelling treasures to the sunny ray,
> Inly disturb'd, and wond'ring what this wild
> Outrageous tumult means, their loud complaints
> The country fill—
> At last of snowy white, the gather'd flocks
> Are in the wattled pen innumerous press'd,
> Head above head; and rang'd in lusty rows
> The shepherds sit, and whet the sounding shears.
> Behold, where bound, and of its robe bereft,

* Penn. Brit. Zool. i. 32. † Sonnini, iii. 251.

By needy man, that all-depending lord,
How meek, how patient, the mild creature lies!
What softness in his melancholy face,
What dumb complaining innocence appears!

There are in the voices of all animals innumerable tones, perfectly understood by each other, and entirely beyond our powers of discrimination. It should seem somewhat remarkable that the Ewe can always distinguish her own Lamb, and the Lamb its mother, even in the largest flocks: and at the time of shearing, when the Ewes are shut up in a pen from the Lambs, and turned loose one by one as they are shorn, it is pleasing to see the meeting between each mother and her young one. The Ewe immediately bleats to call her Lamb, which instantly obeys the well-known voice, and, returning the bleat, comes skipping to its dam: at first it is startled by her new appearance, and approaches her with some degree of fear, till it has corrected the sense of sight by those of smelling and hearing.

Various sorts of insects infest the sheep, but that which is the most teazing to them is a species of Oestrus, or Gadfly,* that deposits its eggs on the inner margins of their nostrils, occasioning them to shake their heads violently, and thrust their noses into the dust or gravel. The Larvæ, or Grubs, when hatched, crawl up into the frontal sinuses, and, when full fed, and ready to undergo their change, are again discharged through the nostrils. The French shepherds make a common practise of easing the

* Oestrus Ovis, of Linnæus. See an account of this insect in the third volume of the present work.

sheep by trepanning them, and taking out the maggot: this is sometimes practised in England, but not always with success. They have, besides this, a kind of tick amongst their wool,* and are subject to worms in the liver.†

THE ICELANDIC SHEEP.‡

The Icelandic, or many-horned Sheep, differ from ours in several particulars. They have straight, upright ears, a small tail, and sometimes four or five horns.—In a few instances they are kept in stables during winter; but by far the majority of them are left to seek their own food in the open plains. They are particularly fond of the scurvy-grass,§ which renders them excessively fat.

In stormy weather they hide themselves in caves from the fury of the elements; but when these retreats are not to be found, they, during the heavy falls of snow, collect together, and place their heads near each other, with their muzzles bent downwards towards the ground. This not only prevents their being so easily buried under the snow, but renders them much easier to be discovered by the owner. In this situation they will sometimes remain several days; and there have been many instances of hunger forcing them to gnaw each other's wool, which, forming into hard balls in their stomachs,

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* Acarus Reduvius, of Linnæus

† Fasciola Hepatica, of Linnæus.

‡ Synonyms.—Ovis Aries Polycerata. *Linn.*—Many-horned Sheep, and Icelandic Sheep. *Penn.*——*Berv. Quad. p.* 62.

§ Cochlearia, of Linnæus.

often destroys them. After the storm has ceased they are, however, generally sought for and disengaged.

A good Icelandic Sheep will yield from two to six quarts of milk a day; and of this the inhabitants make butter and cheese: but the principal profit arising from them is in the wool, which is not shorn off as with us, but remains on till the end of May, when it loosens of itself, and is stripped off at once like a skin. The whole body is by this time covered again with new wool, which is short and extremely fine. It continues to grow during the summer, and becomes towards autumn of a coarser texture, very shaggy, and somewhat resembling Camel's hair. This covering enables the Sheep to support the rigours of winter; but if, after they have lost their fleece, the spring proves wet, the inhabitants sow a piece of coarse cloth round the stomachs of the weakest to guard them against its ill effects.*

THE BROAD-TAILED SHEEP.†

This variety of the common Sheep is found about Aleppo, and in Barbary, Ethiopia, and some others of the eastern countries. In its general appearance, excepting its tail, it does not differ much from the European Sheep. The body of one of

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* Von Troil, 136.

† SYNONYMS.—Ovis aries laticaudata. *Linn.*—Mouton de Barbarie, Mouton d'Arabie. *Buffon.*—Tunis Sheep, and Barbary Sheep. *Smellie.*—Broad-tailed Sheep. *Penn.*

these, without including the head, feet, entrails, and skin, weighs generally from fifty to sixty pounds, of which the tail makes up fifteen; but some of the largeſt breed, that have been fattened with care, will sometimes weigh a hundred and fifty pounds, the tail alone composing one third of the whole weight. This broad flattish tail is mostly covered with long woolly hairs, and, becoming very small at the extremity, turns up again.—It is entirely composed of a substance between marrow and fat, which serves very often in the kitchen instead of butter; and, being cut into small pieces, makes an ingredient in various dishes. When the animal is young it is little inferior to the best marrow.

Wild rove the flocks, no burdening fleece they bear
In fervid climes: nature gives nought in vain.
Carmenian wool on the broad tail alone
Resplendent swells, enormous in its growth:
As the sleek Ram from green to green removes,
On aiding wheels his heavy pride he draws,
And glad resigns it for the hatters' use.

Sheep of the above extraordinary size are usually kept up in yards, so as to be in little danger of hurting their tails as they walk about; but in the fields, in order to prevent injury from the bushes, the shepherds, in several parts of Syria, fix a thin piece of board on the under part, which is not, like the rest, covered with wool, and to this board are sometimes added small wheels: whence, with a little exaggeration, we have the story of the Oriental Sheep being under the necessity of having carts to carry their tails.

Though the tails of these Sheep are, from their nature, tucked up, yet the necessity of larger carriages for the tails of the African Sheep, mentioned by Herodotus, Ludolphus, and others, is real, for those, when the animal is fat, actually trail upon the ground.*

Their fleeces are exceedingly fine, long, and beautiful; and, in Thibet, are worked into shawls, which form a considerable source of wealth to the inhabitants. Shaw says the mutton tastes of the wool.†

THE FAT-RUMPED SHEEP.‡

This is a variety that bears a considerable alliance with the last. It differs principally in having no tail, but instead of this has its buttocks immensely large, and appearing like two naked and smooth hemispheres. These are composed entirely of suet, and sometimes weigh forty pounds or upwards.—The nose is arched; the ears are pendulous; and under the neck are a kind of wattles.

These Sheep are inhabitants of the deserts of Tartary, where, from their being very prolific, (the females producing two, and often three, at a birth) they are very numerous. The wool is long, coarse, and matted in flocks; and its colour is generally white, but it is sometimes found black, reddish, or spotted. Their bleat is much like that of a Calf.

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* Russel's Aleppo. † Shaw's Travels, 241.

‡ SYNONYMS.—Ovis aries Steatopyga. *Kerr.*—Fat-rumped Sheep. *Penn.*—*Bew. Quad. p.* 61

From feeding on succulent plants that grow near salt-springs or lakes, which are impregnated with that mineral, they become excessively fat in the summer; so much so, as frequently to weigh two hundred and thirty or two hundred and forty pounds each.

This breed is very common among the Tartars, from the Volga to the Irtish, and to the Altaic chain of mountains.

THE ARGALI.*

The Argali, or wild Sheep, is specifically distinct from all the foregoing varieties. It has large horns, arched semicircularly backwards, and divergent at their tips; wrinkled on their upper surface, and flatted beneath. On the neck are two pendant hairy dew-laps. It is about the size of a small Deer, and in summer is of a brownish ash-colour, mixed with grey on the upper parts, and whitish beneath: in winter the former changes to a rusty, and the latter to a whitish, grey; and the hair becomes considerably longer. The horns of some of the old Rams are said to be of such an enormous size as to weigh fifteen or sixteen pounds each.

The Argali abound in Kamtschatka, where they afford to the inhabitants both food and clothing. The flesh, and particularly the fat, the Kamtschadales esteem as diet fit for the Gods; and there is no labour which they will not undergo in the chace. Whole families abandon their habitations in the

* Synonyms.—Ovis ammon. *Linn.*—Moufflon *Buffon.*—Wild Sheep, and Siberian Goat. *Penn.*——*Shaw's Gen. Zool.* ii. *tab.* 201—*Bew. Quad. p.* 64.

spring of the year, and occupy the entire summer in this employment, amidst the steepest and most rocky mountains, fearless of the dreadful precipices which often overwhelm the eager sportsman.

These animals are shot with guns or with arrows; sometimes with cross-bows placed in their paths, and discharged by their treading on a string which pulls the fatal trigger. They are sometimes chased by Dogs, but their fleetness in a moment leaves these far in the rear. The purpose, however, is answered: they are driven to the heights where they often stand and view, as it were with contempt, the Dogs below: while their attention is thus occupied, the hunter creeps cautiously within reach, for they are the shyest of all animals, and brings them down with his gun.

In some of the other northern countries, a great multitude of Horses and Dogs are collected together, and a sudden attempt is made to surround them. Great caution is necessary, for if the animals perceive the approach of their enemies, either by their sight or smell, they instantly take to flight and secure themselves in the lofty and inaccessible summits of the mountains.

The Kamtschadales do not shear them, but leave the wool on till the end of May, when it becomes loose, and is stripped entirely off in one fleece.

The dried flesh is in Kamtschatka an article of commerce.*

The female brings forth one or two Lambs in the

* Penn. Arct. Zool. i. 12.

month of March. Besides Kamtschatka these animals are to be met with in all the Alpine regions in the centre of Asia, and on the highest mountains of Barbary, Corsica, and Greece.

THE OX TRIBE.

THE Ox tribe are seldom found but in flat pastures, entirely avoiding mountains and woods, for which their form is extremely ill calculated, as they are much more large and clumsy than most other animals. Their services to mankind are more considerable than those even of the sheep, serving, in addition to the qualifications of these animals, as beasts of draught and burthen. Their voice is called *lowing* and *bellowing*. They fight by pushing with their horns, and kicking with their feet.

There are about *nine* different species, but these are frequently so nearly connected as to render it difficult, in many instances, to assign a proper distinction between species and variety. The common Ox is found in no less than eight different varieties.

In the Ox the horns are concave, smooth, turned outwards, and forwards in a semilunar form. In the lower jaw there are eight front-teeth; there are none in the upper, and no tusks in either.

THE COMMON OX.*

From this animal are derived the many different varieties of common cattle found in various parts both of the old and new continent. In its wild and native state it is distinguished by its size, and the great depth and shagginess of its hair, which, about the head, neck, and shoulders, is sometimes of such a length as almost to touch the ground. His horns are rather short, sharp-pointed, exceedingly strong, and stand distant from each other at their bases. His colour is generally either a dark or a yellowish brown. His limbs are very strong, and his whole aspect savage and gloomy.† He grows to such a size as sometimes to weigh sixteen hundred or two thousand pounds, and the strongest man cannot lift the hide of one of these animals from the ground.‡

Wild Oxen are found in the marshy forests of Poland, among the Carpathian Mountains, in Lithuania, and also in several parts of Asia.

In Lord Tankerville's park, at Chillingham, near Berwick-upon-Tweed, there is yet left a breed of wild cattle, probably the only remains of the true and genuine breed of that species at present to be found in this kingdom.

Their colour is invariably white, with the muzzle black, and the whole inside of the ear, and about

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* Synonyms.—Bos Taurus. *Linn.*—Boeuf. *Buffon.*——*Shaw's Gen. Zool. ii. tab.* 208.—*Bew. Quad. p.* 34.

† Shaw's Gen. Zool. ‡ Penn. Arct. Zool. i. 1.

one-third part of the outside, from the hip downwards, red: their horns are white, with black tips, very fine, and bent upwards. The weight of the Oxen is from thirty-five to forty-five stone, and of the cows, from twenty-five to thirty-five, 14lb. to the stone.

At the first appearance of any person near them they set off in full gallop, and at the distance of two or three hundred yards wheel round and come boldly up again, tossing their heads in a menacing manner. On a sudden they make a full stop at the distance of forty or fifty yards, looking wildly at the object of their surprize; but, on the least motion, they all turn round, and gallop off again with equal speed, but not to the same distance, forming a smaller circle; and again returning with a bolder and more threatening aspect than before, they approach much nearer, probably within thirty yards, when they make another stand, and again gallop off. This they do several times, shortening their distance, and advancing nearer, till they come within a few yards, when most people think it prudent to leave them, not choosing to provoke them further, as it is probable that in a few turns more they would make an attack.

The mode of killing them was perhaps the only modern remains of the grandeur of ancient hunting. On notice being given that a wild Bull would be killed on a certain day, the inhabitants of the neighbourhood assembled, sometimes to the number of a hundred horsemen, and four or five hundred foot, all armed with guns or other weapons. Those

on foot stood upon the walls, or got into trees, while the horsemen rode off a Bull from the rest of the herd, until he stood at bay, when they dismounted and fired. At some of these huntings twenty or thirty shots have been fired before the animal was subdued. On such occasions the bleeding victim grew desperately furious, from the smarting of his wounds, and the shouts of savage joy echoing from every side. But from the number of accidents which happened, this dangerous mode has been little practised of late years, the park-keeper alone generally killing them with a rifle-gun at one shot.

When the Cows calve they hide their young for a week or ten days, in some sequestered situation, and go to suckle them two or three time-a-day. If any persons come near the Calves these clap their heads close to the ground, and lie like a Hare in form, to hide themselves. This seems a proof of their native wildness, and it is corroborated by the following circumstance that happened to Dr. Fuller, the author of the History of Berwick, who found a hidden Calf two days old, very lean and weak. On his stroking its head it got up, pawed two or three times like an old Bull, bellowed very loud, went back a few steps, and bolted at his legs with all its force: it then began to paw again, bellowed, stepped back, and bolted as before. But being aware of its intentions, he moved aside, and it missed its aim, fell, and was so very weak, that though it made several efforts it was not able to rise. It, however, had done enough; the whole herd was alarmed, and coming to its rescue, they obliged him to retire.

When any one of them happens to be wounded, or grown weak and feeble through age or sickness, the rest of the herd set upon and gore it to death.*

There is scarcely any part of the Ox that is not of some use to mankind. Boxes, combs, knife-handles, and drinking-vessels, are made of the horns. The horns, when softened with boiling water, become so pliable, as to be formed into transparent plates for lanterns; an invention ascribed to King Alfred, who is said to have first used them to preserve his candle-time measurers from the wind. Their dung is useful as manure. Glue is made of the cartilages, gristles, and the finer pieces of cuttings and parings of the hides, boiled in water, till they become gelatinous and the parts sufficiently dissolved, and then dried. The bone is a cheap substitute, in many instances, for ivory. The thinnest of the Calves-skins are manufactured into vellum. The blood is used as the basis of Prussian-blue. Saddlers and others use a fine sort of thread, prepared from the sinews, which is much stronger than any other equally fine. The hair is valuable in various manufactures; and the suet, fat, and tallow, for candles. The utility of the milk and cream is well known.

From the circumstance of these animals furnishing the Gentoos with milk, butter, and cheese, their favourite food, they bear for them a superstitious veneration, founded thus principally in gratitude. There is scarcely a Gentoo to be found that would

* Fuller's History of Berwick upon Tweed.—Bewick's Quadrupeds.

not, were he under a forced option, prefer sacrificing his parents or children to the slaying of a Bull or Cow. Believing fully in the doctrine of transmigration, they are also alarmed at the idea of injuring the souls of those of their fellow-creatures that have taken their abode in these animal cases. This also tends to restrain them from destroying, designedly, any of the brute creation, and to prevent them from dispossessing, by violence, any being of that life which God alone can give; and they respect it in the flea equally with the elephant.*

The Indians, who use the Ox in agriculture, think it more convenient for their purposes to be without horns. They have therefore a mode of impeding the growth of these, by making an incision, at a proper period, where the horns are first seen, and afterwards applying fire to the wounds.

We cannot conclude this article without a remark on the barbarous mode of slaughtering Oxen adopted in this country. Drawn with its horns to a ring, this wretched animal has its head sometimes shattered to pieces by the butcher's axe before it falls. Three or four blows are often insufficient to deprive it of sensation, and it not unfrequently happens, that after the first or second it breaks loose from its murderers, and has to be seized and tied up afresh. Those who have heard its groans and bellowings on these occasions will easily be convinced of the agony it undergoes. The Portu-

* Grose i. 184.

guese slay their Oxen by passing a sharp knife through the vertebræ of the neck into the spine, which causes instant death. Lord Somerville took with him to Lisbon a person to be instructed in this method of "laying down cattle," as it is termed there, in the hopes that our slaughterers might be induced to take the same mode; but with all the stupidity and prejudice of a set of men steeled against every principle of humanity, they have hitherto invariably refused to adopt it, nor will they probably ever do it, unless compelled by some act of the legislature.

THE BACKELEY.

The Backeley of the Hottentots seems to be but a variety of the common Ox, its temperament and disposition considerably altered from difference of climate and situation. The name is said to be derived from the word *backeley*, which in the Hottentot language signifies *war*. In all their armies there are considerable troops of these animals (trained to war) which are easily governed, and which are let loose by the chief when a proper opportunity occurs. They instantly dart, with great impetuosity, on the enemy; strike with their horns, kick, overturn, and trample under their feet every thing that opposes their fury. Hence, if not quickly turned back, they run ferociously into the ranks, which they soon put into the utmost disorder, and thus prepare an easy victory for their masters.

They are likewise of great use in guarding the flocks. When pasturing, at the least signal from

their keeper, they collect and bring together the wandering animals. They also run with fury upon strangers, which makes them a great security against the attacks of the *buschies*, or robbers of cattle. Every *kraal* has at least six of these Backeleys, which are chosen from among the fiercest Oxen. When one of them dies, or becomes unserviceable by age, another is selected from the flock to succeed him. The choice is made by one of the oldest of the kraal, who is supposed to distinguish the animal that will be the most easily instructed. This noviciate is associated with one of the most experienced Backeleys, and he is taught to follow his companion, either by blows, or some other means. In the night they are tied together by the horns, and are likewise kept in the same situation during part of the day, till the young Ox is completely trained to be a vigilant defender of the flock. These Backeleys, or keepers of the flocks, know every inhabitant of the *kraal*, and shew the same marks of respect for all the men, women, and children, as a Dog does for those who live in his master's family. Hence, these people may approach their cattle with the utmost safety; for the Backeleys never do them the smallest injury. But if a stranger, particularly an European, should use the same freedom, without being accompanied with a Hottentot, his life would be in the greatest danger. These Backeleys, which pasture all around, would soon run upon him at full gallop, and if not protected by the shepherds, by fire-arms, or by suddenly climbing a tree, his destruction would be inevitable. In vain would he

have recourse to sticks or stones: a Backeley is not to be intimidated by such feeble weapons. M. Kolben says, that he was often attacked by the Backeleys: whenever he observed them sallying after him he used to call out aloud to the keepers, but the animals frequently got up to him before he could make the people hear. In this case he was always under the necessity of firing at them, and the report of his gun he found had invariably the desired effect in frightening them away.*

THE AMERICAN BISON.†

The American Bison has short, rounded, distant horns, pointing outwards. It is covered in many parts with long shaggy hair, and has a high protuberance on the shoulders. The fore-parts of the body are extremely thick and strong; and the hinder parts comparatively weak.

These animals range in droves, feeding in the open savannahs morning and evening. They retire during the sultry parts of the day to rest near shady rivulets and streams of water, frequently leaving so deep an impression of their feet in the moist land, (from the great weight of their bodies) as to be traced and shot by the artful Indians.‡ In this un-

* Kolben, i. 178.

† SYNONYMS.—Bos Americanus. *Linn.*—Bison d'Amerique. *Buff.*—American Bison. *Smellie.*—Buffalo. *Lawson. Catesby.*—American Buffalo. *Hearne.*—American Ox and American Bison. *Penn.*——*Shaw's Gen. Zool.* ii. *tab.* 206. 207.

‡ "The head of an old Bull (says Mr. Hearne) is of a great size and weight indeed: some that I have seen were so large, that I could not, without difficulty, lift them from the ground." Journey to the Northern Ocean, p. 251.

dertaking it is necessary that the men should be particularly careful, since, when only wounded, they become excessively furious. They go against the wind, as the smell of the animals is so exquisite, that the moment they get scent of their enemy they retire with the utmost precipitation. With a favourable wind the men approach very near, since the animals are frequently almost blinded by the hair that covers their eyes. In taking aim they direct their piece to the hollow of the shoulder, by which means they generally bring them down at one shot. If they do not fall, they immediately run upon their enemy, and, with their horns and hoofs, as offensive weapons, tear him in pieces, and trample him into the earth.*

They are so amazingly strong, that when they fly through the woods from a pursuer, they frequently brush down trees as thick as a man's arm; and, be the snow ever so deep, such is their strength and agility, that they are able to plunge through it much faster than the swiftest Indian can run in snow-shoes. "To this (says Mr. Hearne) I have been an eye-witness many times, and once had the vanity to think that I could have kept pace with them; but, though I was at that time celebrated for being particularly fleet in snow-shoes, I soon found that I was no match for the Bisons, notwithstanding they were then plunging through such deep snow, that their bellies made a trench in it as large as if many heavy sacks had been hauled through it.†"

In Canada the hunting of the Bison is a very com-

* Catesby, ii p. xxvii. Du Pratz, 254. † Hearne, 253.

mon employment of the natives. They draw up in a large square, and commence their operations by setting fire to the grass, which, at certain seasons, is very long and dry. As the fire goes on they advance, closing their ranks as they proceed. The animals, alarmed with the fire on all sides, gallop confusedly about till they are hemmed in so close that frequently not a single beast is able to escape.*

In Louisiana the men mount on horseback, each with a sharp crescent-pointed spear in his hand.—They approach with the wind, and, as soon as the animals smell them, they instantly make off; but the sight of the Horses moderates their fear, and the majority of them, from their luxuriant feeding are at certain times of the year, so fat and unwieldy, as easily to be enticed to slacken their pace. As soon as the men overtake them, they endeavour to strike the crescent just above the ham, in such manner as to cut through the tendons, and render them afterwards an easy prey.†

The hunting of these animals is also common in several parts of South America. It commences with a sort of festivity, and ends in an entertainment in which one of their carcases supplies the only ingredient. As soon as a herd of cattle is seen on the plain, the most fleet and active of the horsemen prepare to attack them, and, descending in the form of a widely extended crescent, hunt them in all directions. After a while they become so jaded and weary, that they seem ready to sink under their fa-

* Charlevoix, i. 204. † Du Pratz, 173.

tigue; but the hunters, still urging them to flight by their loud cries, drive them at last from the field. Such as are unable to exert the necessary speed for escape are slaughtered. The hunters from these supply themselves with what flesh they want, and abandon the rest to the Wolves.*

The sagacity which these animals exhibit in defending themselves against the attacks of the Wolves is admirable. When they scent the approach of a drove of those ravenous creatures, the herd throws itself into the form of a circle, having the weakest in the middle, and the strongest ranged on the outside, thus presenting an impenetrable front of horns.—When, however, they are taken by surprize and have recourse to flight, numbers of the fattest and weakest infallibly perish.†

Attempts have been made to domesticate these animals, by catching the calves and herding them with the common kind, in hopes of improving the breed. This has not, however, been found to answer, for, when they grew up, they always became impatient of restraint, and, from their great strength, would break down the strongest inclosure, and entice the tame cattle to follow them.

The uses of the Bison are various. Powder-flasks are made of their horns. The skin forms an excellent buff leather, and, when dressed with the hair on, serves the Indians for clothes and shoes. The Europeans of Louisiana use them for blankets, and find them light, warm, and soft. The flesh is a

* Pages, i. 88. † Du Pratz, 144.

considerable article of food, and the bunch on the shoulders is esteemed a great delicacy. The bulls, when fat, frequently yield each a hundred and fifty pounds weight of tallow, which forms a considerable article of commerce. The hair or wool is spun into gloves, stockings, and garters, that are very strong, and look as well as those made of the finest Sheep's wool. Governor Pownal assures us that the most luxurious clothing may be manufactured from it.*

THE BUFFALO.†

The Buffalo, in its general form, has a great resemblance to the common Ox, but it differs from it in its horns, and in some particulars of its internal structure. It is larger than the Ox; the head is also bigger in proportion, the forehead higher, and the muzzle longer, but, at the same time, broad and square. The horns are large, and of a compressed form, with the exterior edge sharp: they are strait for a considerable length from their base, and then bend slightly upwards.‡ The general colour of the animal is blackish, except the forehead, and the tip of the tail, which are of a dusky white. The hunch is not, as many have supposed it, a large fleshy lump, but is occasioned by the bones that form the withers being continued to a greater length than in most other animals.

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* Pennant's Arctic Zoology.

† Synonyms.—Bos Bubalus. *Linn.*—Buffle. *Buff.*—Buffalo. *Penn.*

‡ Mr. Pennant says they have been known to grow to the length of ten feet each. Outlines, iii. 115.

It is a native of the warmer parts of India and Africa, but has been introduced into some parts of Europe, where it is now become naturalized. In Italy it is perfectly domesticated, and constitutes a great part both of the riches and food of the poor. It is here employed in agriculture, and butter and cheese are made from its milk.

The Buffalo is very frequent in Western Hindostan. It is fond of wallowing in mud, and will swim over the broadest rivers. It is often seen, during inundations, to dive ten or twelve feet deep, to force up with its horns the aquatic plants, and eat them while swimming.*

These animals are domesticated in many parts of the east. It is said to be a singular sight to see, morning and evening, large herds of them cross the Tigris and Euphrates. They proceed, all wedged against each other, the herdsman riding on one of them, sometimes standing upright, and sometimes couching down; and if any of the exterior ones are out of order, stepping lightly from back to back, to drive them along.†

A very singular circumstance relative to these animals, is recorded by those who completed the voyage to the Pacific Ocean, begun by Captain Cook. When at Pulo Condore they procured eight Buffaloes, which were to be conducted to the ships by ropes put through their nostrils and round their horns; but when these were brought within sight of the ship's people, they became so furious that some

* Penn. Outlines of the Globe, iii. 115. † D'Obsonville, 134.

of them tore out the cartilage of their nostrils, and set themselves at liberty; and others broke down even the shrubs to which it was frequently found necessary to fasten them. All attempts to get them on board would have been fruitless, had it not been for some children whom the animals would suffer to approach them, and by whose puerile management their rage was quickly appeased: and, when the animals were brought to the beach, it was by their assistance, in twisting ropes about their legs, that the men were enabled to throw them down, and by that means get them into the boats. And what appears to have been no less singular than this circumstance was, that they had not been a day on board before they became perfectly gentle.*

The skin and horns of this animal are its most valuable parts; the former being extremely strong and durable, and consequently well adapted for various purposes in which a strong leather is required. The latter have a fine grain, are strong, and bear a good polish; and are, therefore, much valued by cutlers and other artificers.

The flesh of the Buffalo is said to be excellent eating; and so entirely free from any disagreeable smell or taste, that it resembles beef as nearly as possible. The flesh of the Cows, when sometime gone with young, is esteemed the finest; and the young Calves cut out of the bellies of their mothers are reckoned by the Americans the greatest possible delicacy.

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* Cook's last Voyage, iv. 271.

THE CAPE BUFFALO.*

The savage disposition of this animal renders it well known about the Cape of Good Hope, and in the several other parts of Africa where it is found. It is very large and enormously strong. The body is of a black or dusky ash-colour; the front parts covered with long, coarse, black, hair. The horns are very thick and rugged at the base, sometimes measuring three feet in length, and laying so flat as to cover almost all the top of the head. The ears are large and slouching. The body and limbs are very thick and muscular; and the animal is above eight feet long and six in height. The head hangs down and bears a most fierce and malevolent aspect.

In the plains of Caffraria the Buffalos are so common that it is by no means unusual to see a hundred and fifty, or two hundred, of them in a herd. They generally retire to the thickets and woods in the day time, and at night go out into the plains to graze.†

Treacherous in the extreme they frequently conceal themselves among the trees, and there stand lurking till some unfortunate passenger comes by, when the animal at once rushes out into the road, and attacks the traveller, who has no chance to escape.

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* Synonyms.—Bos Cafer. *Linn.*—Cape Ox.. *Penn. Kerr.*—Cape Buffalo. *Sparrman.*—African Buffalo. *Church.*—Buffalo. *Berwick.*—*Benv. Quad. p.* 43.

† Thunberg, i. 194.

but by climbing up a tree, if he is fortunate enough to be near one. Flight is of no avail, he is speedily overtaken by the furious beast, who, not content with throwing him down and killing him, stands over him even for a long time afterwards, trampling him with his hoofs, and crushing him with his knees; and not only mangles and tears the body to pieces with his horns and teeth, but likewise strips off the skin, by licking it with his tongue. Nor does he perform all this at once, but often retires to some distance from the body, and returns with savage ferocity to gratify afresh his cruel inclination.*

As Professor Thunberg was travelling in Caffraria, he and his companions had just entered a wood, when they discovered a large old male Buffalo, lying quite alone, in a spot that, for the space of a few square yards, was free from bushes. The animal no sooner observed the guide, who went first, than, with a horrible roar, he rushed upon him. The fellow turned his horse short round behind a large tree, and the Buffalo rushed straight forwards to the next man, and gored his horse so dreadfully in the belly that it died soon after. These two climbed into trees, and the furious animal made his way towards the rest, of whom the professor was one, who were approaching, but at some distance. A Horse without a rider was in the front; as soon as the Buffalo saw him he became more outrageous than before, and attacked him with such fury that he not only drove his horns into the Horse's breast, but even out again through

* Sparrman.

the very saddle.* This Horse was thrown to the ground with such excessive violence that he instantly died, and many of his bones were broken. Just at this moment the Professor happened to come up, but from the narrowness of the path, having no room to turn round, he was glad to abandon his Horse, and take refuge in a tolerably high tree. The Buffalo, however, had finished, for after the destruction of the second Horse he turned suddenly round, and galloped away.†

Some time after this the Professor and his party espied an extremely large herd of Buffalos grazing on a plain. Being now sufficiently apprized of the disposition of these animals, and knowing that they would not attack any person in the open plains, they approached within forty paces, and fired amongst them. The whole troop, notwithstanding the individual intrepidity of the animals, surprized by the sudden flash and report, turned about, and made off towards the woods. The wounded Buffalos separated from the rest of the herd from inability to keep pace with them. Amongst these was an old bull Buffalo, which ran with fury towards the party. They knew that, from the situation of the eyes of these animals, they could see in scarcely any other direction than straight forward; and that in an open plain, if a man that was pursued darted out of the course and threw himself flat on the ground, they would gallop forward to a considerable distance before they missed him. These circum-

* We are not informed of what materials the Hottentot saddles are made.

† Thunberg, i. 184.

stances prevented their suffering any material alarm. The animal from this contrivance passed close by them, and fell before he appeared to have discovered his error. Such, however, was his strength, that notwithstanding the ball had entered his chest, and penetrated through the greatest part of his body, he ran at full speed several hundred paces before he fell.*

The Cape Buffalo is frequently hunted both by Europeans and by the natives of South Africa. In Caffraria he is generally killed by means of javelins, which the inhabitants use with considerable dexterity. When a Caffre has discovered the place where several Buffalos are collected together he blows a pipe, made of the thigh bone of a Sheep, which is heard at a great distance. The moment his comrades hear this notice they run up to the spot, and surrounding the animals, which they take care to approach by degrees, lest they should alarm them, throw their javelins at them. This is generally done with so sure an aim that out of eight or twelve it is very rarely that a single one escapes. It sometimes, however, happens that while the Buffalos are running off some one of the hunters who stands in the way is tossed and killed; but this is a circumstance not much regarded by the Caffrarians. When the chace is ended each one cuts off and takes away his share of the game.†

Some Europeans at the Cape once chaced a Buffalo, and having driven him into a narrow place he turned round, and instantly pushed at one of his

* Thunberg, ii. 84. † Ibid, i. 205.

pursuers, who had on a red waistcoat. The man, to save his life, ran to the water, plunged in, and swam off: the animal followed him so closely that the poor fellow had no alternative but that of diving. He dipped overhead, and the Buffalo, losing sight of him, swam on towards the opposite shore, three miles distant, and, as was supposed, would have reached it, had he not been shot by a gun from a ship lying at a little distance. The skin was presented to the Governor of the Cape, who had it stuffed, and placed it among his collection of curiosities.*

Like the Hog this animal is fond of wallowing in the mire. His flesh is lean, but juicy, and of a high flavour. The hide is so thick and tough, that targets, musket-proof, are formed of it; and even while the animal is alive it is said to be in many parts impenetrable to a leaden musket-ball: balls hardened with a mixture of tin are, therefore, always used, and even these are often flattened by the resistance. Of the skin the strongest and best thongs for harness are made.†

The Hottentots, who never put themselves to any great trouble in dressing their victuals, cut the Buffalos' flesh into slices, and then smoke, and at the same time half broil it, over a few coals. They also frequently eat it in a state of putrefaction. They dress the hides by stretching them on the ground with stakes, afterwards strewing them over with warm ashes, and then with a knife scraping off the hair.‡

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* Kolben, ii. 107. † Church. ‡ Thunberg, i. 192—195.

THE HORSE TRIBE.

THE animals of this tribe perform various services for mankind, in drawing, carrying burthens, and in bearing about on their back this lord of the creation. All the species, except one that is found among the South American mountains, have single hoofs: this, however, is said to have its hoofs cloven. They all fight by biting, and kicking with their hind-feet; and have the singular property of breathing only through the nostrils.

They are gregarious, and in a wild state inhabit the most retired deserts. Of the *six* species now known, only one is found on the New Continent, the rest being confined to Africa and Asia.

The generic characters of the Horse are six parallel front-teeth in the upper-jaw; and six in the lower-jaw, somewhat projecting. It has also one canine-tooth on each side, in both jaws, remote from the rest.

THE COMMON HORSE.*

The Horse is a native of several parts of Asia and Africa: and in the southern parts of Siberia large herds of them are occasionally seen. They are ex-

* SYNONYMS.—Equus caballus. *Linn.*—Cheval. *Buffon.*—Wild Horse. *Bell.*——*Shaw's Gen. Zool. ii. tab.* 214.

tremely swift, active and vigilant; and, like some other tribes of animals, have always a centinel, who gives notice to the herd of the approach of danger, by a loud neigh, on which they all gallop off, with astonishing rapidity.

In Ukraine, where wild Horses are often found, they are made, from the impracticability of taming them, no otherwise serviceable to man than as food. The flesh both of the young and old animals is very commonly exposed for sale in the markets. The latter is said to eat much like beef; whilst that of the foals is as white and more tender than veal.*

The wild Horses of South America are of Spanish origin, and entirely of the Andalusian breed. They are now become so numerous as to live in herds, some of which are said to consist of ten thousand. As soon as they perceive domestic Horses in the fields they gallop up to them, caress, and, by a kind of grave and prolonged neighing, invite them to run off. The domestic Horses are soon seduced, unite themselves to the independent herd, and depart along with them. It happens not unfrequently that travellers are stopped on the road by the effect of this desertion. To prevent this they halt as soon as they perceive these wanderers, watch their own Horses, and endeavour to frighten away the others: in this case the wild Horses resort to stratagem; some are detached before, and the rest advance in a close column, which nothing can interrupt. If they are so alarmed as to be obliged to retire, they

* Beauplau's description of Ukraine: Churchill's Coll. i. 601.

change their direction, but without suffering themselves to be dispersed. Sometimes they make several turns round those they wish to seduce, in order to frighten them; but they often retire after making one turn. When the inhabitants wish to convert some of these wild Horses into domestic ones, which they find not very difficult to be done, persons mounted on Horseback attack a troop of them, and when they approach them, they throw ropes, with great care, round their legs, which prevent them from running away. When brought home they are tied with a halter to a stake or a tree, without food or drink, for two or three days. After this they are cut, and then broke in the same manner as the domestic Horses. They soon become docile, but if not carefully watched will again join their wild friends.*

The Horse, in a domestic or improved state, is found in almost every part of the world, except, perhaps, within the Arctic circle; and its reduction and conquest may be considered as the greatest acquisition from the animal world, that the art and industry of man have ever made. As domestics, their docility and gentleness are unparalleled, and they contribute more to the convenience and pride of man than all other animals put together.

In Arabia they are found in their highest perfection, as little degenerated in their race and powers as the Lion or Tiger. To the Arabs they are as

* Account of the wild Horses in Spanish America, by D. Felix Azzara. Phil. Mag. v. 330.

dear as their own children; and the constant intercourse, arising from living in the same tent with their owner and his family, creates a familiarity that could not otherwise be affected, and a tractability that arises only from the kindest usage. They are the fleetest animals of the desert, and are so well trained as to stop in their most rapid course, by the slightest check of the rider. Unaccustomed to the spur, the least touch with the foot sets them again in motion; and so obedient are they to the rider's will, as to be directed in their course merely by the motion of a switch. They form the principal riches of many of the Arab tribes, who use them both in the chace and in their plundering expeditions. In the day-time they are generally kept saddled at the door of the tent, prepared for any excursion their master may take.* They never carry heavy burthens, or are employed on long journies. Their constant food, except in spring, when they get a little grass, is barley, which they are suffered to eat only during the night.† The Arab, his wife, and children, always lie in the same apartment with the mare and foal, who, instead of injuring them, suffer the children to rest on their bodies and necks without in the least incommoding them: even the poor gentle animals seem afraid to move lest they should hurt them. They never beat or correct their horses, but always treat them with the utmost kindness: they talk to and reason with them.

The whole stock of a poor Arabian of the desert

* Irwin's Voyage, i. 6. † Penn. Brit. Zool. ii. 637.

consisted of a beautiful Mare: this the French Consul at Saïd offered to purchase, with an intention to send her to Louis XIV. The Arab, pressed by want, hesitated a long time, but at length consented, on condition of receiving a very considerable sum of money, which he named. The Consul wrote to France for permission to close the bargain, and having obtained it, sent immediately to the Arab the information. The man, so poor as to possess only a miserable rag, a covering for his body, arrived with his magnificent courser. He dismounted, and looking first at the gold, and then stedfastly at his Mare, heaved a deep sigh:—"To whom is it (he exclaimed) that I am going to yield thee up? To Europeans! who will tie thee close, who will beat thee, who will render thee miserable! Return with me my beauty, my jewel! and rejoice the hearts of my children!" As he pronounced the last words, he sprang upon her back, and was out of sight almost in a moment.*

What an amiable and affecting sensibility in a man, who in the midst of distress, could prefer all the disasters attendant on poverty rather than surrender the animal that he had long fostered in his tent, and had been the child of his bosom, to what he supposed inevitable misery! The temptation even of riches, and an effectual relief from poverty had not sufficient allurements to induce him to so cruel an act.

* Studies of Nature.

"The Horses of the Bedouin Arabs, whose lives, (says Sonnini) are spent in traversing the scorching sands, are able, notwithstanding the fervency of the sun, and the suffocating heat of the soil over which they pass, to travel three days without drinking, and are contented with a few handsful of dried beans given once in four-and-twenty hours. From the hardness of their labour and diet they are of course very lean, yet they preserve incomparable vigour and courage."*

Several of the other eastern countries, as Persia, Æthiopia, Egypt, and Barbary, have derived their breed of Horses from Arabia, and in these climates the same character and manners seem to be retained: they are all spirited, strong, and active. The description of the Eastern Horses in the Book of Job, is exceedingly poetical and expressive:—"Hast thou given the Horse strength? hast thou clothed his neck with thunder? Canst thou make him afraid as a Grasshopper? The glory of his nostrils is terrible. He paweth in the valley, and rejoiceth in his strength: he goeth on to meet the armed men: He mocketh at fear, and is not affrighted; neither turneth he back from the sword. The quiver rattleth against him, the glittering spear, and the shield. He swalloweth the ground with fierceness and rage: neither believeth he that it is the sound of the trumpet. He saith among the trumpets, ha, ha; and he smelleth the battle afar off, the thunder of the captains and the shouting."†

* Sonnini, ii. 298. † Job xxxix. v. 19—26.

The fiery courser, when he hears from far,
The sprightly trumpets, and the shouts of war,
Pricks up his ears, and trembling with delight,
Shifts place, and paws, and hopes the promised fight.
On his right shoulder his thick mane reclin'd,
Ruffles at speed, and dances in the wind:
His horny hoofs are jetty black and round;
His chine is double; starting with a bound,
He turns the turf, and shakes the solid ground.
Fire from his eyes, clouds from his nostrils flow;
He bears his rider headlong on the foe.*

In Norway, where the roads are most of them impassable for carriages, the Horses, which are nearly all stallions, are remarkably sure-footed, they skip along over the stones, and are always full of spirit. Pontoppidan says, when they go up and down a steep cliff, on stones like steps, they first gently tread with one foot, to try if the stone be firm; and in this they must be left entirely to their own management, or the best rider in the world would run the risk of breaking his neck. When they have to descend steep and slippery places, and such frequently occur, they, in a surprising manner, like the Asses of the Alps (which we shall next mention) draw their hind legs together under their bodies, and thus slide down. They exhibit much courage when they contend, as they are often under the necessity of doing, with the Wolves and Bears, but particularly with the latter. When the Horse perceives any of these animals near him, and has a Mare or Gelding with him, he first puts these behind out of the way, and then furiously attacks

* Virgil Georg. iii. l. 82.

his enemy with his fore-legs, which he uses so expertly as generally to come off the conqueror. Sometimes, however, the Bear, who has twice the strength of his adversary, gets the advantage, particularly if the Horse makes at any attempt, by turning round, to kick him with his hind-legs; for the Bear then instantly closes upon him, and keeps such firm hold as scarcely by any means whatever to be shaken off: the Horse in this case gallops away with his enemy, till he falls down and expires from loss of blood.*

There are few countries that can boast a breed of Horses so excellent as our own. The English hunters are allowed to be among the noblest, most elegant, and useful animals in the world. While the French, and many other European nations, seem only attentive to spirit and parade, we train ours principally for strength and dispatch. Theirs, however, have the advantage of never coming down before, as ours do, because, in breaking, they put them more on their haunches, while we, perhaps, throw them too much forward. With unwearied attention, however, to the breed, and repeated trials of all the best Horses in different parts of the world, ours are now become capable of performing what no others can. Among our racers we have had one (Childers) which has been known to pass over eighty-two feet and a half in a second of time, a degree of fleetness perhaps unequalled by any other

* Pontoppidan, part ii. p. 3.

horse.—In the year 1745, the post-master of Stretton rode, on different horses, along the road to and from London, no less than 215 miles in eleven hours and a half, a rate of above eighteen miles an hour: and in July, 1788, a Horse belonging to a gentleman of Billiter-square, London, was trotted for a wager thirty miles in an hour and twenty-five minutes, which is above twenty-one miles an hour. —In London there have been instances of a single horse drawing, for a short space, the weight of three tons: and some of the pack-horses of the north usually carry burthens weighing upwards of four hundred pounds; but the most remarkable proof of the strength of the British Horses is in our mill Horses, some of which have been known to carry, at one load, thirteen measures of corn, that in the whole would amount to more than nine hundred pounds in weight.

The extreme brutality with which men sometimes conduct themselves towards the inferior orders of the creation, is almost too horrid to be related. In the history of the Horse, one of the most generous, and at the same time one of the most serviceable, of all animals, we have too many illustrations of this fact:—

In the year 1799 Lord Robert Seymour stated on oath, before the Magistrates in Bow-street, "That he saw a coachman, in Oxford-street, unmercifully whipping, from his box, two half-starved and perfectly exhausted horses, which were endeavouring to draw from the channel an empty hackney-coach. The driver then alighted, and seizing the near or

left-hand horse, beat him for a considerable time with the butt-end of his whip: he then proceeded to the other horse, the outer shoulder of which was perfectly raw and excoriated, exposing a sort of pipe-hole in the centre, which appeared to have been formed by a rowel. The coachman then proceeded to punch repeatedly the raw surface of the shoulder, and deliberately worked the butt-end of his whip into the rowel or pipe-hole. His Lordship intreated him to desist, reminding him of the utter incapacity, on the part of the Horses, to move. The coachman's reply was, that "if he (his Lordship) interfered any further on the part of the Horses. he would kill them with a knife which he had in his pocket!"

Horce-racing has given birth to innumerable instances of the most deliberate and savage brutality;—A young jockey, who rode for various employers, described, very feelingly, the painful situation in which he frequently found himself placed. He once rode the Horse of a gentleman who kept several in training, and of whom he had received many favours; but though he had exerted all his skill he found it impossible to win. He was engaged to ride the same Horse again. He represented to his employer the impossibility of winning. His reasoning, however, was not calculated to make any impression on the heart of this Smithfield sportsman. He abused the lad for his tenderness, and his orders were, to "Make him win, or cut his entrails out! Mark, if you do not give him his belly-full of whip, you shall never ride again for me. I'll find

Horse, if you'll find whip and spur!" The generous animal ran three four-mile heats without flinching, with such an excess of exertion, that his eyes seemed ready to start from their sockets, but he was unsuccessful. He was literally cut up alive, from his shoulder to his flank, the tender parts of his belly were cut into ribbands: no one rebuked the thick-headed miscreant who was the author of this useless piece of cruelty, except his jockey; who swore he would rather perish for want than repeat a business of such infamy.*

There is another species of inhumanity which all ranks, except the poor and indigent, stand accused of; this is the custom of travelling post. How often do we see the trembling chaise or coach-horse panting for breath, every limb shattered by the hardness of the roads, entering the inn-yard, spent apparently to the last, from extreme exertion. His sides wreathed or bleeding with the lashes or spurs of his unfeeling driver, and every muscle and tendon quivering with convulsive agony! in vain is he offered food: his mouth is parched with thirst and dust. He cannot eat, and water is denied, because it would endanger his existence, which is to be preserved for future torment. Often is the postillion bribed to additional exertion, for which his Horses must be flogged till ready to expire from fatigue and torture!†

> Could the poor post-horse tell thee all his woes;
> Shew thee his bleeding shoulders, and unfold
> The dreadful anguish he endures for gold:

* Lawrence on Horses.

† Essay on the Primeval diet of man, &c.

Hir'd at each call of business, lust, or rage,
That prompt the trav'ller on from stage to stage:
Still on his strength depends their boasted speed;
For them his limbs grow weak, his bare ribs bleed;
And though he groaning, quickens at command,
Their extra shilling in the rider's hand
Becomes his bitter scourge:—'tis he must feel
The double efforts of the lash and steel;
Till when, up hill, the destin'd inn he gains,
And trembling under complicated pains,
Prone from his nostrils, darting on the ground,
His breath emitted, floats in clouds around:
Drops chase each other down his chest and sides,
And spatter'd mud his native colour hides:
Through his swoln veins the boiling torrent flows,
And every nerve a separate torture knows.

Though endowed with vast strength, and great powers, such is the disposition of the Horse, that it rarely exerts either to its master's prejudice: on the contrary, it will endure fatigues, even to death, for our benefit. Providence seems to have implanted in him a benevolent disposition, and a fear of the human race, with, at the same time, a certain consciousness of the services we can render him.* We have, however, one instance of recollection of injury, and an attempt to revenge it. This is inserted in a work of D. Rolle, Esq. of Torrington, in Devonshire:—A Baronet, one of whose hunters had never tired in the longest chace, once encouraged the cruel thought of attempting completely to fatigue him: after a long chace, therefore, he dined, and again mounting, rode him furiously among the hills. When brought to the stable, his

* Penn. Brit. Zool. i.

strength appeared exhausted, and he was scarcely able to walk. The groom, possessed of more feeling than his brutal master, could not refrain from tears at the sight of so noble an animal thus sunk down. The Baronet some time after entered the stable, and the Horse made a furious spring upon him, and had not the groom interfered, would soon have put it out of his power of ever again misusing his animals.

The barbarous custom of docking the tails, and cutting the ears of Horses, is in this country very prevalent. The former, principally with Waggon-horses, under the pretence that a bushy tail collects the dirt of the roads; and the latter, from the idea that they are rendered more elegant in their appearance. Thus, from ideal necesssity, we deprive them of two parts of their body principally instrumental, not only to their own ease and comfort, but in their utility to us. By taking away their ears, the funnels are destroyed which they always direct to the place from whence any sound is heard, and they are thus rendered nearly deaf. And in the loss of their tail, they find even a still greater inconvenience. During summer they are perpetually teazed with swarms of insects, that either attempt to suck their blood, or to deposit their eggs in the rectum, which they have now no means of lashing off; and in winter they are deprived of a necessary protection against the cold.

But of all others the custom that we have adopted, for it is found in no other nation than this, of nicking them, is the most useless and absurd. What

an affecting sight it is to go into the stable of some eminent horse-dealer, and there behold a range of fine and beautiful steeds with their tails cut and slashed, tied up by pullies to give them force, some dropping blood, some corruption, and some blood and corrupt matter mixed, suffering such torture that they frequently never recover the savage gashes they have received; and for what is all this done?—that they may hold their tails somewhat higher, and be for ever after deprived of the power of moving the joints of them as a defence against Flies!

We have another abuse to notice, observable in those who shoe Horses: the stupid blacksmith, in order to save himself a little trouble, will frequently apply the shoe red-hot to the Horse's foot, that it may burn for itself a bed in the hoof, and fit it for its reception. "The utmost severity (says Lord Pembroke) ought to be inflicted on all those who clap shoes on hot. This unpardonable laziness of farriers, in making feet thus to fit shoes, instead of shoes to fit the feet, dries up the hoofs, and utterly destroys them."* It is of the most ruinous consequence, hardening and cracking the hoofs, and inducing even the most fatal disorders. The joints, the wind, and the eyes, are injured by it, and the gross humours which naturally descend to the feet, and ought to be carried off by insensible perspiration, are detained by the hardness of the surface they have to penetrate.

In the history of the Academy of Sciences at Pa-

* Method of treating Horses, p. 186.

ris, a mode is laid down by which Horses may at any time be stopped, when they become so unruly as to run away. This is done on the principle of their always standing still when suddenly deprived of sight. M. Dalesme has there shewn a very easy manner of disposing two lines, which let fall at once upon the eyes of two coach Horses, two pieces of leather in such a manner as immediately to hinder them from seeing. These cords may be pulled from within the carriage. This appears capable of being improved into an useful preventive to the fatal accidents which sometimes occur from unruly or highly fed Horses.*

The stomach of Horses is small, and at the cardia there is a little valve which renders them incapable of vomiting. Their natural diseases are few, but our ill-usage, or neglect, or, which is very frequent, our over-care of them, bring on a numerous train, which are often fatal. They sleep but little, and this, in general, on their legs. If properly treated, they will live from forty to fifty years.

A French writer, Lasterie, has lately published a description of a Horse without hair, which he considers as forming a variety in the species, and whose state is neither the effect of art nor of disease. This Horse, purchased at Vienna, and taken from the Turks, appears to be about twenty years of age. He eats the same food, and in about the same quantity, as other Horses, is lean, and very easily affected by

* Martyn, iii. 91.

cold. There is not upon the whole body any hair except the eye-lashes of the lower eye-lid. His skin is black, bordering upon grey, with some white spots under the fore-shoulders, and, in the groins: it is also soft to the touch, glossy, and a little unctuous. The bones of the nose are depressed, which embarrasses his respiration, and produces a noise each time that he takes in or emits air.*

THE ASS.†

The Ass is found wild in the mountainous deserts of Tartary, the southern parts of India and Persia, and in some parts of Africa. In its native state it exhibits an appearance very far superior, both in point of vivacity and beauty, to the animals of the same species in a state of domestication.

Asses live in separate herds, each consisting of a chief, and several mares and colts, sometimes to the number of twenty. They are excessively timid, and provident against danger. A male takes on him the care of the herd, and is always on the watch. If they see a hunter, who, by creeping along the ground, has got near them, the centinel takes a great circuit, and goes round and round him, as discovering somewhat to be apprehended. As soon as the animal is satisfied, he rejoins the herd, which sets off with great precipitation. Sometimes his curiosity costs him his life; for he approaches so near as to give the hunter an opportunity of shooting him.—Their senses of hearing and smelling are most ex-

* Journal de Physique.

† Synonyms.—Equus Asinus. *Linn.*—Asne, *Buff.*——*Shaw's Gen. Zool.* ii. *tab.* 216.—*Bew. Quad. p.* 17.

quisite ; so that they are not in general to be approached without the utmost difficulty.

The Ass, like the Horse, was imported into America by the Spaniards : and that country seems to be peculiarly favourable to this race of animals ; for, where they have run wild, they have multiplied in such numbers, that in some places they have become quite a nuisance. In the kingdom of Quito, the owners of the grounds where they are bred, suffer all persons to take away as many as they can, on paying a small acknowledgement in proportion to the number of days the sport of hunting them lasts. They catch them in the following manner :—A number of persons go on horseback, and are attended by Indians on foot ; when arrived at the proper places, they form a circle in order to drive them into some valley ; where, at full speed, they throw the noose, and endeavour to halter them. The creatures, finding themselves inclosed, make very furious efforts to escape ; and, if only one forces his way through, they all follow with an irresistible impetuosity. However, when noosed, the hunters throw them down and secure them with fetters, and thus leave them till the chace is over. Then, in order to bring them away with greater facility, they pair them with tame Asses ; but this is not easily performed, for they are so remarkably fierce, that they often wound the persons who undertake to manage them.

They have all the swiftness of Horses, and neither declivities nor precipices can retard their career.—When attacked, they defend themselves with their heels and mouth with such address, that, without

slackening their pace, they often maim their pursuers. But the most remarkable property in these creatures is, that, after carrying their first load, their celerity leaves them, their dangerous ferocity is lost, and they soon contract the stupid look and the dulness peculiar to their species. It is also observable that these creatures will not permit a Horse to live among them. They always feed together; and, if a Horse happens to stray into the place where they graze, they all fall upon him, and, without even giving him the choice of flying, bite and kick him till they leave him dead on the spot.

The manner in which the Asses descend the precipices of the Alps or the Andes is truly extraordinary, and deserves to be recorded. In the passes of these mountains there are often on one side steep eminences, and on the other frightful abysses; and, as these generally follow the direction of the mountain, the road, instead of lying on a level, forms at every little distance steep declivities of several hundred yards downwards. These can only be descended by Asses; and the animals themselves seem sensible of the danger, by the caution that they use. When they come to the edge of one of the descents, they stop of themselves, without being checked by the rider; and, if he inadvertently attempts to spur them on, they continue immoveable. They seem all this time ruminating on the danger that lies before them, and preparing themselves for the encounter. They not only attentively view the road, but tremble and snort at the danger. Having prepared for their descent, they place their fore-feet in a posture as if they were

stopping themselves; they then also put their hinder feet together, but a little forward, as if they were about to lie down. In this attitude, having taken a survey of the road, they slide down with the swiftness of a meteor. In the mean time all that the rider has to do is to keep himself fast on the saddle, without checking the rein, for the least motion is sufficient to disorder the equilibrium of the Ass, in which case they must both unavoidably perish. But their address in this rapid descent is truly wonderful; for, in their swiftest motion, when they seem to have lost all government of themselves, they follow exactly the different windings of the road, as if they had previously settled in their minds the route they were to follow, and taken every precaution for their safety. In this journey, the natives, who are placed along the sides of the mountains, and hold by the roots of the trees, animate the beasts with shouts, and encourage them to perseverance. Some Asses, after being long used to these journies, acquire a kind of reputation for their safety and skill; and their value rises in proportion to their fame.

In Spain the breed of Asses has, by care and attention, become the finest in the world: they are large, strong, elegant, and stately animals, and are often found to rise to fifteen hands high. The best of them sell sometimes for a hundred guineas each or upwards. This shews that the Ass may, notwithstanding all our prejudices, and our generally contemptuous opinion of it, be rendered even an elegant as well as an useful animal. The Romans had a

breed which they held in such high estimation, that Pliny mentions one of the stallions selling for a price greater than three thousand pounds of our money; and he says that in Celtiberia, a province in Spain, a she Ass has brought colts which were bought for nearly the same sum. And Varro speaks of an Ass that was sold in his own time in Rome for near five hundred pounds.

Egypt and Arabia also excel us in Asses as they do in Horses. Some of these are of great size and elegance, and sell occasionally for higher prices than even their Horses. In their attitudes and movements there is a degree of gracefulness, and in their carriage a nobleness unknown even in those of Spain. Their foot is sure, their step light, and their paces quick, brisk, and easy.

They are not only in common use for riding on in Egypt, but they were not long ago the only animals on which the Christians of any country were allowed to appear in the capital. The Mahometan merchants, the most opulent of the inhabitants, and even ladies of the highest rank, used them.

Being more hardy than the Horse, they are preferred to them for long journies across the deserts. Most of the Mussulmen pilgrims use them in the long and laborious journey to Mecca; and the chiefs of the Nubian caravans, which are sixty days in passing immense solitudes, ride upon Asses, that do not appear fatigued when they arrive in Egypt.

When the rider alights, he has no occasion to fasten his Ass; he merely pulls the rein of the bridle tight, and passes it over a ring on the fore-part of

the saddle: this confines the animal's head, and is sufficient to make him remain patiently in his place.

In the principal streets of Cairo Asses stand ready bridled and saddled for hire, and answer the purposes of the hackney-coaches in London. The person who lets them accompanies his Ass, running behind to goad him on, and cry out to those on foot to make way. They are regularly rubbed down, and washed, which renders their coat smooth, soft, and glossy. Their food is the same as that of the Horses, usually consisting of chopped straw, barley, and small beans.*

The gentleness, patience, and perseverance of this abused and neglected animal are without example. He is subjected to excessive labour, and contented with the coarsest herbage. The common lanes and high roads are his nightly residence, and his food the thistle or plaintain, which he sometimes prefers to grass. In his drinking he is, however, singularly nice, refusing all but the water of the clearest brooks. He is much afraid of wetting his feet, and will, even when loaded, turn aside to avoid the dirty parts of the road. His countenance is mild and modest, fully expressive of his simple and unaffected deportment.

His services are too often repaid by hard fare and cruel usage; and, being generally the property of the poor, he partakes of their wants and their distresses. He is more healthy than the Horse, and, though generally degraded into the most useless and neglected of domestic quadrupeds, he might, by

* Sonnini, ii, 307. 311.

care and education, be rendered useful in a variety of domestic affairs in which the Horse is now employed. Were we but to pay a little attention to him we could not fail to be gainers by it. We should also cross our breed with the Arabian, Egyptian, or even the Spanish, males: which would produce us an offspring improved both in strength and appearance. The fame of Asses being stubborn animals is, in a great measure, unfounded; as it arises solely from ill usage, and not from any natural defect in their constitution or temper.

An old man, who a few years ago sold vegetables in London, used in his employment an Ass, which conveyed his baskets from door to door. Frequently he gave the poor industrious creature a handful of hay, or some pieces of bread, or greens, by way of refreshment and reward. The old man had no need of any goad for the animal, and seldom indeed had he to lift up his hand to drive it on. His kind treatment was one day remarked to him, and he was asked whether his beast was apt to be stubborn. "Ah! Master, (he replied) it is of no use to be cruel, and as for stubborness I cannot complain, for he is ready to do any thing, and to go any where; I bred him myself: he is sometimes skittish and playful, and once run away from me; you will hardly believe it, but there were more than fifty people after him, attempting in vain to stop him; yet he turned back of himself, and never stopped till he ran his head kindly into my bosom."*

* Church.

Leo Africanus informs us, that, at Cairo, Asses were frequently trained up for public exhibitions, and taught many tricks that persons in general would suppose these apparently stupid animals incapable of performing.

At *les combats des animaux*, the theatre, or Bear-garden of Paris, Mr. Pennant was witness to an extraordinary instance of spirit and prowess in a tame Ass, in a fight with a Dog. The latter could never seize on the long-eared beast; which sometimes caught the Dog in his mouth, and sometimes flung it under his knees, and kneeled on it, till the Dog at length fairly gave up the contest.*

There were, according to Hollingshed, no Asses in this kingdom in the reign of Elizabeth. How soon afterwards they were introduced is uncertain; they are, however, at present naturalized in this country, and their utility becomes every day more experienced.

The skin of the Ass is elastic, and of use for various articles, such as drums, shoes, leaves of pocket-books, &c. The flesh of the wild Ass is said to be very delicate and good, but when killed in a tame state this is hard and unfit for food. The milk is universally known, and is esteemed an approved specific in many disorders. It is light, easy of digestion, and highly nutritious.

* Penn. Quad. i. 2.

THE ZEBRA.*

The Zebra, somewhat like the Mule, has a large **head and ears:** its body is round and plump, and **its legs** delicately small. The skin is as smooth as **satin,** and adorned with elegant stripes like ribbons, which in the male are brown, on a yellowish white ground, and in the female black on a white ground.

Zebras inhabit the scorching plains of Africa, their vast herds affording sometimes an agreeable relief to the eye of the weary traveller. They assemble in the day on the extensive plains of the interior of the country, and by their beauty and liveliness adorn and animate the dreary scene.

All attempts to tame this animal so as to render it serviceable have been hitherto fruitless. Wild and independent by nature it seems ill adapted to servitude and restraint. If, however, it were taken young, and much care was bestowed in its education, it might very probabably be in a great measure domesticated. A beautiful male Zebra, at Exeter-change, London, which was afterwards burnt to death by the mischievous act of a Monkey setting fire to the straw on which he lay, appeared to have entirely lost his native wildness, and was so gentle as to suffer a child of six years old to sit quietly on his back, without exhibiting the least sign of displeasure. He was familiar even with strangers,

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* SYNONYMS.—Equus Zebra. *Linn.*—Zèbre. *Buffon.*——*Shaw's Gen. Zool.* ii. *tab.* 217.—*Brw. Quad. p.* 20.

and received those kind of caresses that are usually given to the Horse, with evident satisfaction.*

The one that was, some years ago, kept at Kew, seemed of a savage and fierce nature: no one dared venture to approach it, except the person who was accustomed to feed it, and who alone could mount on its back. Mr. Edwards saw this animal eat a large paper of tobacco, paper and all: and was told it would eat flesh, and any kind of food whatever that was given to it. This, however, might proceed from habit or necessity in its long voyage to this country; for in a native state these animals all feed, like Horses and Asses, on vegetables.†

In some parts about the Cape of Good Hope, there are many Zebras, there is a penalty of fifty rix-dollars inflicted on any person who shoots one of them: and whenever any of them happen to be caught alive they are ordered to be sent to the Governor.‡

HIPPOPOTAMUS.

THE Hippopotamus, for only *one* species has hitherto been discovered as belonging to this genus, has four front-teeth in each jaw; the upper ones

* Church. † Edwards's Glean. i. 29. tab. 223.
‡ Thunberg, ii. 114.

standing distant by pairs, the lower prominent, and the two middle ones the longest. The canine teeth are solitary, those of the lower-jaw extremely large, long, curved, and the ends cut obliquely. The feet are armed at the margin with four hoofs.

THE AMPHIBIOUS HIPPOPOTAMUS.*

In size the full-grown Hippopotamus is equal to the Rhinoceros, or even sometimes superior. One that M. Le Vaillant killed in the South of Africa measured ten feet seven inches in length, and about nine feet in circumference. Its form is highly uncouth, the body being extremely large, fat, and round; the legs very short and thick; the head large; the mouth extremely wide; and the teeth of vast strength and size. The eyes are small and black; the ears small; the tail thick, short, and sparingly scattered with hair. The whole animal is covered with short hair, thinly set, and is of a brownish colour. The hide is in some parts two inches thick, and not much unlike that of the Hog: that of a full-grown animal is sufficiently heavy to load a Camel.†

These animals inhabit the rivers of Africa, from the Niger to Berg River, many miles north of the Cape of Good Hope. They formerly abounded in

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* SYNONYMS.—Hippopotamus Amphibius. *Linn.*—Hippopotami, River Horses, Water Elephants, or Ker-kamanon. *Barbot.*—Hippopotame, ou Cheval Marin. *Buffon.*—Sea-horse. *Dampier.*——*Shaw's Gen. Zool.* ii. *tab.* 219.—*Bew. Quad. p.* 163.

† Le Vaillant, i. 414.—Hasselquist, 187.

the rivers nearer the Cape, but are now almost extirpated.

From the unwieldiness of his body and the shortness of his legs, the Hippopotamus is not able, according to M. de Buffon, to move fast upon land, and is then extremely timid. When pursued he takes to the water, plunges in, sinks to the bottom, and is seen walking there at ease; he cannot, however, continue there long without often rising to the surface; and in the day-time is so much afraid of being discovered that, when he takes in fresh air, the place is hardly perceptible, for he scarcely ventures to put even his nose out of the water. In rivers unfrequented by mankind he is less cautious, and puts out the whole of his head.

If wounded he will rise and attack boats or canoes with great fury, and often sink them by biting large pieces out of their sides. In shallow rivers the Hippopotamus makes deep holes in the bottom in order to conceal his great bulk. When he quits the water he usually puts out half his body at once, and smells and looks around; but sometimes rushes out with great impetuosity, and tramples down every thing in his way. During the night he leaves the rivers in order to pasture, when he eats sugar-canes, rushes, millet, rice, &c. consuming great quantities, and doing much damage in the cultivated fields.*

The Egyptians adopt a singular mode of, in

* Buff. Quad.

some measure, freeing themselves from this destructive animal. They mark the places that he chiefly frequents, and there lay a quantity of pease. When the beast comes ashore, hungry and voracious, he immediately falls to eating in the nearest place: and filling himself with the pease, they occasion an insupportable thirst. He rushes into the water, and drinks so copiously that the pease in his stomach, being fully saturated, swell so much as very soon afterwards to kill him.*

Among the Caffres in the south of Africa, the Hippopotamus is sometimes taken in pits made in the paths that lead to his haunts. But the gait of this animal, when undisturbed, is generally so cautious and slow, that he often smells out the snare, and avoids it. The most certain method is to watch him at night, behind a bush close to his path; and, as he passes, to wound him in the tendons of the knee-joint, by which he is immediately rendered lame, and unable to escape from the numerous hunters that afterwards assail him.†

These creatures are capable of being tamed. Belon says, he has seen one so gentle as to be let loose out of a stable, and led by its keeper, without attempting to injure any person.

"The Hippopotamus is not (says Dr. Sparmann) so quick in its pace on land as the generality of the larger quadrupeds, though, perhaps, it is not so slow and heavy as M. de Buffon describes it to be; for both the Hottentots and Colonists look upon it

* Hasselquist, 188. †Barrow, 209.

as dangerous to meet a Hippopotamus out of the water, especially as, according to report, they had had a recent instance of one of these animals, which, from certain circumstances was supposed to be in rut, having for several hours pursued a Hottentot, who found it very difficult to make his escape."

Professor Thunberg was informed, by a respectable person at the Cape, that as he and a party were on a hunting expedition, they observed a female Hippopotamus come from one of the rivers, and retire to a little distance from its bank, in order to calve. They lay still in the bushes till the Calf and its mother made their appearance, when one of them fired, and shot the latter dead on the spot. The Hottentots, who imagined that after this they could seize the Calf alive, immediately ran from their hiding-place, but though only just brought into the world, it got out of their hands, and made the best of its way to the river, where, plunging in, it got safely off. This is a singular instance of pure instinct, for, the Professor observes, the young creature, unhesitatingly, ran to the river, as its proper place of security, without having previously received any instructions from the actions of its parent.*

There seems little doubt as to this animal being the Behemoth of Holy Writ. In rivers where they are commonly found vast numbers of them may be heard snorting and blowing in every part, loud as the torrent that roars among the rocks. The de-

* Thunberg, ii. 68.

scription in the Book of Job is poetic, bold, and figurative:—"Behold now Behemoth which I made with thee; he eateth grass as an Ox: his bones are as strong pieces of brass: his bones are like bars of iron: he lieth under the shady trees, in the covert of the reed and fens. The shady trees cover him with their shadow; the willows of the brook compass him about. Behold he drinketh up a river; he trusteth that he can swallow up Jordan into his mouth. He taketh it with his eyes; his nose pierceth through the snares."

The flesh of the Hippopotamus is in great request among the Hottentots, who are very fond of it, either roasted or boiled. Their partiality might not, however, induce an European to suppose it excellent, for they considerably exceed our Epicures in their relish for high-flavoured (putrefied) game. Thunberg passed a Hottentot tent which had been pitched for the purpose of consuming the body of an Hippopotamus that had been killed some time before: the inhabitants were in the midst of such stench that the travellers could hardly pass them without being suffocated.*

The skin is cut into thongs for whips, which are, for softness and pliability, preferred by the Africans to those made of the hide of the Rhinoceros. The *processus maxillaris* is said to be an effectual remedy for the stone and gravel. And the Tusks, from their always preserving their original purity and whiteness, are superior to ivory. The French manufacture the latter into artificial teeth.†

* Thunberg, i. 208. † Vaillant—Thunberg—Sparmann.

THE HOG TRIBE.

THE manners of these animals are in general filthy and disgusting. They are fond of wallowing in the mire, and feed almost indifferently on animal and vegetable food, devouring even the most corrupted carcasses. With their strong tendinous snout they dig up the earth in search of roots and other kinds of food. They are exceedingly prolific.—The male is named Boar, the female, Sow, and the young ones are called Pigs.

There are *five* species.

In the upper-jaw are four front-teeth, the points of which converge: and usually, six in the lower-jaw, which project. The canine-teeth, or tusks, are two in each jaw, those above short, while those below are long, and extend out of the mouth. The snout is prominent, moveable, and has the appearance of having been cut off, or truncated. The feet are cloven.

THE COMMON HOG.*

The Wild Boar, the stock or original of the Domestic Hog, is a native of almost all the temperate parts both of Europe and Asia, as well as of some of the upper parts of Africa.

* SYNONYMS.—Sur Scrofa. *Linn.*—Sanglier et Marcassin. *Buffon.*—Wild Hog. *Browne.*——*Shaw's Gen. Zool. ii. tab.* 221, 222.—*Penn. Quad. p.* 144. 146.

While they are young, these animals live in herds, for the purpose of mutual defence, but the moment they come to maturity, they walk the forest alone and fearless. They seldom attack unprovoked, but dread no enemy, and shun none. When hunted, they do not so much fly their assailants as keep them at bay, and are at last rather wearied out, or overcome by numbers, than fairly killed in the chace.

The Domestic Hog is, generally speaking, a very harmless creature, and preys on no animals but either dead ones, or such as are incapable of resistance. He lives mostly on vegetables, yet can devour the most putrid carcasses. We, however, generally conceive him to be much more indelicate than he really is. He selects, at least the plants of his choice, with equal sagacity and niceness, and is never poisoned, like some other animals, by mistaking noxious for wholesome food. Selfish, indocile, and rapacious, as we think him, no animal has greater sympathy for those of his own kind. The moment one of them gives the signal of distress, all within hearing rush to its assistance. They have been known to gather round a dog that teazed them, and kill him on the spot. Inclose a male and female in a sty when young, and the female will decline from the instant her companion is removed, and will probably die of a broken heart. This animal is well adapted to the mode of life to which it is destined. Having to gain a subsistence principally by turning up the earth with its nose; we find that the neck is

strong and brawny; the eyes small and placed high in the head; the snout long; the nose callous and tough, and the power of smelling peculiarly acute. Its external form is indeed very unwieldy, but by the strength of its tendons the Wild Boar is enabled to fly from the hunters with surprizing agility. The back toe on the feet of this animal prevents its slipping while it descends steep declivities.

In Minorca this animal is converted into a beast of draught; a Cow, a Sow, and two young Horses, have been seen in that island yoked together, and of the four the Sow drew the best. The Ass and the Hog are here common helpmates, and are frequently yoked together to plow the land.

In some parts of Italy Swine are made use of in hunting for truffles,* which grow some inches deep in the ground. A cord being tied round the hind-leg of one of the animals, it is driven into the pastures, and it is said that wherever it stops and begins to root with its nose, truffles are sure to be found.

The Hog is one of those animals that are doomed to clear the earth of refuse and filth; and that convert the most nauseous offals into the richest nutriment in its flesh. It has not altogether been unaptly compared to a miser, who is useless and rapacious in his life, but at his death becomes of public use, by the very effects of his sordid manners. During his life he renders little service to

* Lycoperdon tuber of Linnæus.

mankind, except in removing that filth which other animals reject.

The extreme thickness of his hide and fat renders him almost insensible to ill treatment, and instances have even occurred of Mice eating their way into the fat on the back of a Hog without incommoding the creature.

Although naturally inoffensive, he possesses powers which, when called into action, render him a very formidable enemy. He is, however, stupid, inactive, and drowsy; and nothing but the calls of appetite interrupts his repose, to which he always returns as soon as this is satiated.

The senses of smelling and taste these animals possess in great perfection. Wind seems to have great influence on them, for when it blows violently they seem much agitated, and run towards the sty, sometimes screaming in a most violent manner. Naturalists have also remarked that, on the approach of bad weather, they will bring straw to the sty as if to guard against its effects. The country people have a singular adage that "Pigs can see wind."

That they are extremely tenacious of life is known to almost every person who is at all acquainted with their manners. The most curious instance that we have met with of this in any writer is in Josselyn's account of two voyages to New England. We shall insert the passage, though we are not able to vouch for its truth. "Being at a friend's house in Cambridgeshire, the cook-maid, making ready to slaughter a Pig, she put the hinder parts

between her legs, as the usual manner is, and, taking the snout in her left hand, with a long knife stuck the Pig, and cut the small end of the heart almost in two, letting it bleed as long as any blood came forth; then, throwing it into a kettle of boiling water, the Pig swam twice round about the kettle; when, taking it out to the dresser, she rubbed it with powdered rosin and stripped off the hair, and as she was cutting off the hinder petty-toe, the Pig lifted up his head with open mouth, as if it would have bitten: well, the belly was cut up, the entrails drawn out, and the heart laid upon the board, which, notwithstanding the wound it received, had motion in it above four hours after. There were several of the family by, with myself, and we could not otherwise conclude but that the Pig was bewitched."

The female goes four months with young, and has very numerous litters, sometimes so many as twenty at a time. They live to a considerable age, even to twenty-five or thirty years. The flesh, though very nutritious, from not being so digestible as some other kinds of animal food, is supposed to be unwholesome to persons who lead sedentary lives.

In the island of Sumatra there is a variety of this species that frequents the impenetrable bushes and marshes of the sea-coast. These animals live on crabs and roots: they associate in herds, are of a grey colour, and smaller than the English swine. At certain periods of the year, they swim, in herds of sometimes a thousand,

from one side of the river Siak to the other, at its mouth, which is three or four miles broad, and again return at stated times. This kind of passage also takes place in the small islands, by their swimming from one to the other. On these occasions they are hunted by a tribe of the Malays, distinct from all the others of the island, who live on the coasts of the kingdom of Siak, called Salettians.

These men are said to smell the swine long before they see them, and when they do this they immediately prepare their boats. They then send out their Dogs, which are trained to this kind of hunting, along the strand, where, by their barking, they prevent the swine from coming ashore and concealing themselves among the bushes. During the passage the Boars precede, and are followed by the females and the young, all in regular rows, each resting its snout on the rump of the preceding one. Swimming thus in close rows they form a singular appearance.

The Salettians, men and women, meet them in their small flat boats. The former row, and throw large mats, made of the long leaves of the *Pandamus odoratissima* interwoven through each other, before the leader of each row of swine, which still continues to swim with great strength; but, soon pushing their feet into the mats, they get so entangled as to be able either no longer to move them, or only to move them very slowly. The rest are, however, neither alarmed nor disconcerted, but keep close to each other, none of them leaving the position in which they were placed. The men

then row towards them in a lateral direction, and the women, armed with long javelins, stab as many of the swine as they can reach. For those, beyond their reach they are furnished with smaller spears, about six feet in length, which they are able to throw to the distance of thirty or forty feet with pretty sure aim. As it is impossible for them to throw mats before all the rows, the rest of these animals swim off in regular order, to the places for which they set out, and for this time escape the danger. As the dead swine are found floating around in great numbers, they are picked up and put into larger boats which follow for the purpose.

Some of these swine they sell to the Chinese traders who visit the island; and of the rest they preserve principally only the skins and fat. The latter, after being melted, they sell to the Maki Chinese; and it is used by the common people instead of butter, as long as it is not rancid, and also for burning in lamps, instead of cocoa-nut oil.*

THE MEXICAN HOG.†

This animal inhabits the warmest parts of America and some of the West India islands. It is

* Account of hunting the wild swine in Sumatra by Mr. John, missionary at Tranquebar, from Der Gesellschaft Naturforschender Freunde zu Berlin Neune Schriften.

† SYNONYMS.—Sus Tajassu. *Linn.*—Pecary. *Bancroft.*—Pingos. *Stedman.*—Tajaçu. *Tyson.*—Mexican Hog. *Penn.*——*Shaw's Gen. Zool.* ii. *tab.* 224.—*Bew. Quad. p.* 151.

about the size of the small English Hog, and covered with thinly scattered bristles of a black hoary colour. The ears are short, erect, and pointed; and on the top of the back, not far from the rump, is an open gland, from which is a continual discharge of a fœtid unctuous matter. The tusks scarcely project from the mouth; and it is destitute of tail.

They live in considerable flocks, of sometimes above three hundred, in the thickest parts of the forest, and always run in a line, one closely following the other. When the foremost or leader is shot the line is instantly broken, and the whole herd is in confusion; for which reason the Indians take care, if possible, to knock their captain on the head. After this the others even often stand still, stupidly looking at one another, and allowing themselves to be killed one by one.*

They are very fierce, but easily tamed; and do not wallow like the common Hog. They feed on fruit, roots, serpents, and reptiles; and their voice resembles the grunting of the common Hog, but is more strong and loud. If the gland on the back be cut out immediately after death, the flesh is extremely good; but if that be suffered to remain the whole carcass soon becomes infected with an intolerable fœtor.

* Stedman's Surinam.

THE ETHIOPIAN HOG.*

This animal is much allied, in its general appearance, to the common Hog; but is distinguished from it by a pair of large semicircular lobes or wattles placed beneath the eyes. The snout also is much broader, and very strong and callous. It is a native of the hotter parts of Africa, and is a very fierce and dangerous animal. It resides principally in subterraneous recesses, which it digs with its nose and hoofs; and, when attacked or pursued, it rushes on its adversary with great force, striking, like the common Boar, with its tusks, which are capable of inflicting the most tremendous wounds.

These creatures inhabit the wildest, most uncultivated, and hottest, parts of Africa, from Senegal to Congo, and they are also found on the island of Madagascar. The natives carefully avoid their retreats, as they often, from their savage nature, rush upon them unawares, and gore them with their tusks.

A Boar of this species was, in 1765, sent by the governor of the Cape of Good Hope to the Prince of Orange. From confinement and attention he became mild and gentle, except when offended; in which case even those persons to whose care he was entrusted were afraid of him. In general, however, when the door of his cage

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* SYNONYMS.—Sus Æthiopicus. *Linn.*—Emgalo, or Engulo. *Barbot.*—African wild Boar. *Martyn.*—Ethiopian Hog. *Penn.*—Wood Swine. *Sparrman.*——*Shaw's Gen. Zool. ii. tab.* 223.—*Bew. Quad. p.* 149.

was opened he came out in perfect good humour, gaily frisked about in search of food, and greedily devoured whatever was given him.

He was one day left alone in the court-yard for a few minutes, and on the return of the keeper was found busily digging into the earth, where, notwithstanding the cemented bricks of the pavement; he had made an amazingly large hole, with a view, as was afterwards discovered, of reaching a common sewer that passed at a considerable depth below. It was not without much trouble, and the assistance of several men, that his labour could be interrupted. They, at length, however, forced him into his cage, but he expressed great resentment, and uttered a sharp and mournful noise.

His motions were altogether much more agile and neat than those of the common Hog. He would allow himself to be stroked, and even seemed delighted with rough friction. When provoked, or rudely pushed, he always retired backward, keeping his face towards his assailant, and shaking his head or forcibly striking with it.

When after long confinement he was set at liberty for a little while, he was very gay, and leaped about in an entertaining manner. On these occasions he would, with his tail erect, sometimes pursue the Fallow-deer and other animals.

His food was principally grain and roots; and of the former he preferred barley and the European wheat. He was so fond of rye-bread, that he would run after any person who had a piece of it

in his hand. In the acts of eating and drinking he always supported himself on the knees of his fore-feet; and would often rest in this position. His eyes were so situated as to prevent his seeing around him, being interrupted by the wattles and prominences of his face; but, in compensation for this defect, his senses of smelling and hearing were wonderfully acute.*

Dr. Sparrman, when he was in Africa, pursued several Pigs with the old Sows, with the intention of shooting one of them, but though he failed in this object, their chace afforded him singular pleasure. The heads of the females, which had before appeared of a tolerable size, seemed, on a sudden, to have grown larger and more shapeless than they were. This momentary and wonderful change astonished him so much the more, as, riding hard over a country full of bushes and pits, he had been prevented from giving sufficient attention to the manner in which it was brought about. The whole of the mystery, however, consisted in this: each of the old ones, during its flight, had taken a Pig in its mouth; a circumstance that also explained to him another subject of his surprize, which was, that all the Pigs which he had just before seen chasing along with the old ones, had vanished on a sudden. But in this action we find a kind of unanimity among these animals, in which they resemble the tame species, and which they have in a greater degree than

* Buff. Quad. vol. viii. p. 245—254.

many others. It is likewise very astonishing, that the Pigs should be carried about in this manner between such large tusks as those of their mother, without being hurt, or crying out in the least. He was twice afterwards witness to the same circumstance.*

The flesh is very good, and not unlike that of the German Wild Boar.

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* Sparrman's Voyage.

WHALES.*

THE Cete, Linnæus's seventh order of Mammalia, in their external shape, and in their habits, considerably resemble the Fish, yet they arrange with much propriety as an appendix to the four-footed animals. It is true that they inhabit the same watery element with the scaly tribes, and are endowed, like them, with progressive powers of motion in that element, yet in their internal structure they entirely agree with the quadrupeds.

Like the land animals they breathe air by means of lungs, being altogether destitute of gills. This compels them frequently to rise to the surface of the water to respire; and on this account it is that they sleep on the surface. They have also warm blood, and produce and suckle their young in the same manner as the land animals. Their flesh is red, and bears a great resemblance to that of the Bull or Horse. Some of it is very firm; and about the breast and belly it is mixed with tendon. In addition to these resemblances they have the power of uttering sounds, such as bellowing and other loud noises, a faculty denied to the Fish.

The tail is flattened horizontally, contrary to those of the Fishes, and its substance is so firm and

* Cete of Linnæus.

compact that the vessels retain their dilated state even when cut across.

The fat of this order of animals (except the spermaceti) is what we generally term blubber: this is afterwards, by boiling, manufactured into oil. It does not coagulate in our atmosphere, and is probably the most fluid of all animal fats. It is found principally on the outside of the muscles, immediately under the skin, and is in considerable quantity. The use of the blubber appears principally to be in poising their bodies: it also keeps off the immediate contact of the water with the flesh, the continued cold of which might chill the blood; and in this respect it serves a purpose similar to that of clothing to the human race. All the warm blooded amphibia, as the Seal, and Manati tribes, are furnished with this necessary defence.

The Spermaceti Whale * has a kind of fat unknown in any other animal, called *spermaceti*. This is found every where in the body, in small quantity, mixed with the common fat; but it is in the head that the greatest portion is found, and from its being situated in what would, on a slight view, appear to be the cavity of the skull, it has been mistaken by some for the brain.

It is probable that Whales do not require either a division of their food, or a mastication of it in the mouth, but swallow whatever they catch whole; for they are not found to be furnished with parts capable of producing either of these effects. The

* Physeter macrocephalus of Linnæus.

mouth in most of this order is well adapted for catching the food: the jaws spread as they go back, making it proportionally wider than in many other animals.

Some catch their food by means of teeth, which in a few of the species are in both jaws, but in others, as the Spermaceti Whale, only in one jaw. Other species have another mode of catching their food, and retaining it till swallowed, which is by means of the substance called *Whalebone*.

This Whalebone, which is placed on the inside of the mouth, and is attached to the upper-jaw, is of the same nature as horn, and is composed wholly of animal substance. It is extremely elastic, and consists of thin plates of some breadth, and, in some species of very considerable length. These plates are placed in several rows, encompassing the outer skirts of the upper-jaw, like the teeth in other animals. They stand parallel to each other, having one edge towards the circumference of the mouth, and the other towards the centre or cavity. The outer row is composed of the longest plates; and these are in proportion to the different distances between the two jaws, some being fourteen or fifteen feet long, and twelve or fifteen inches broad; but towards the anterior and posterior parts of the mouth they are very short. They rise for half a foot or more, nearly of equal breadths, and afterwards shelve off from their inner side till they come near to a point at the outer. The exterior of the inner rows are the longest, corresponding to the termination of the declivity of the outer, and become

shorter and shorter till they scarcely rise above the gum.

The Whalebone is continually wearing down, and renewing in the same proportion. It is supposed to be principally of use in the retention of food till swallowed: for, as the fish, which the animals catch, are small when compared with the size of the mouth, a sufficient quantity, without some such guard could scarcely be retained.

From these animals being resident entirely in the waters, and generally far from the haunts of man, we cannot be supposed to have any very correct knowledge of their habits of life: their species even are but imperfectly known. The short account of them that we have been able to collect will, we hope, be at least found correct.

THE WHALE TRIBE.

THESE animals have no teeth in either jaw: but, in place of them, the upper-jaw is furnished with the horny laminæ called Whalebone. The tubular opening or spiracle, on the top of the head, has a double external orifice.

THE COMMON WHALE.*

This, which is supposed to be the largest of all animals, inhabits the seas towards the Arctic Pole.

* SYNONYMS.—Balæna mysticetus. *Linn.*—Wallfish. *Mart. Spitzl* Common Whale. *Penn.*—Great Mysticete. *Shaw.*——*Shaw's Ge Zool. ii. tab.* 226.

It usually measures from fifty to a hundred feet in length, and some individuals have been taken even considerably larger than this. The head, which constitutes nearly a third of the whole bulk, is flattish above. The mouth is exceedingly large, stretching almost as far backward as the eyes. The tongue is very soft, being composed almost entirely of fat, and it adheres by its under surface to the lower-jaw. The gullet scarcely exceeds four inches in width. The eyes, which are not larger than those of the Ox, are placed at a great distance from each other, on the sides of the head, in the most convenient situation for the animals seeing around them. The skin is about an inch thick, and the outer or scarf skin about the thickness of parchment, and very smooth. Under the skin lies the blubber, which is from eight to twelve inches in thickness, and, when the animal is in health, of a beautiful yellow colour.

The tail is broad and semilunar, and its blow is sometimes tremendous. The animal uses the tail alone to advance itself in the water; and it is surprizing to see with what force and celerity its enormous bulk cuts through the ocean.

The fins are only used for turning and giving a direction to the velocity impressed by the tail. The female indeed sometimes uses them, when pursued, to bear off her young, for she places these on her back and supports them by the fins on each side from falling.

They are shy and timid animals, being possessed of no weapons either of defence or offence, except

their tail, which they sometimes use against great objects. Their principal food consists of some species of Crabs and Medusæ. From their inoffensive nature they have many enemies, among which is a species of Lepas or Bernacle that adheres to their body, chiefly under the fins, in the same manner as others of the same genus are seen sticking to the foul bottoms of ships. But the enemy they most dread is the Sword-fish.* Whenever this appears the Whale immediately exerts all his powers to escape its attack, which is always certain if they meet. The Sword-fish is sufficiently active to avoid the blows that he makes with his tail, one of which, if it took place, must effectually destroy it. The sea for a considerable space around may be seen dyed with the blood that issues in copious streams from the wounds made in the Whale's body by the dreadful beak of his adversary. The noise made at each blow of the tail is said to be louder than that of a cannon. The fishermen, in calm weather, frequently lie on their oars as spectators of the combat till they perceive the Whale at his last gasp: they then row towards him, and, the enemy retiring at their approach, they enjoy the fruits of its victory.

The fidelity of the male and female to each other exceeds that of most other animals. Some fishermen, as Anderson informs us, in his History of Greenland, having struck one of two Whales, a male and female, that were in company together, the wounded animal made a long and terrible re-

* Xiphias Platypterus of Linnæus.

sistance: it struck down a boat with three men in it with a single blow of its tail, by which all went to the bottom. The other still attended its companion, and lent it every assistance, till, at last, the one that was struck sunk under the number of its wounds, while its faithful associate, disdaining to survive the loss, with great bellowing, stretched itself upon the dead animal, and shared its fate.

The female is supposed to go nine or ten months with young, and generally produces one at a time, but never more than two. When she suckles it she throws herself on one side, on the surface of the water, and in this position the young one attaches itself to the teat. She is extremely tender to her offspring, carrying it with her wherever she goes; and, when hardest pursued, supporting it between her fins. Even when wounded she is said still to clasp it; and when she plunges to avoid danger takes it with her to the bottom, but rises sooner than usual for the purpose only of giving it breath.

The young ones continue with the dams for near twelve months: during this time they are called by the sailors *Short-heads*. They are then extremely fat, and will yield each above fifty barrels of blubber. At two years old they have the name of *Stunts*, from not thriving much immediately after quitting the breast: they then scarcely yield more than twenty barrels of blubber. From this period they are called *Skull-fish*.

The flesh of the Whale is very dry and insipid, except about the tail, which is more juicy,

but still very tasteless. The horny laminæ in the upper-jaw, called Whalebone, is very valuable as an article of commerce: but what these animals are principally taken for is their oil or blubber.*

THE CACHALOT TRIBE.

THESE animals have teeth only in the lower-jaw. There are but *four* species, all of which are found in the European and northern seas.

THE BLUNT-HEADED CACHALOT.†

The head in this species appears exceedingly out of proportion, making in bulk one half of the whole body. This is flat at the end, and as thick there as in the middle. The animal grows to the length of about sixty feet, and circumference of thirty. There are two rows of teeth in the lower-jaw, which, when the mouth is shut, are received into as many sockets above. The tongue is small and pointed, and the throat wide.

We are informed by Crantz, that "one of these creatures being struck, threw up a Shark quite

* For an account of the Whale-fishery the reader is referred to the end of the present order.

† SYNONYMS.—Physeter Macrocephalus. *Linn.*—Pot Walfish. *Ray.*—Cachelot. *Var.*—Spermaceti Whale. *Browne.*——*Shaw's Gen. Zool.* ii. *tab.* 228.

whole, and four yards long: and, at the same time, there were found in its stomach some fishes bones that were a fathom long."*

It is in the cavities of the head of this species that the *spermaceti* is taken. These cavities, which are from twenty to thirty in number, are covered with the common integuments or skin. The perfume called *ambergris* is also formed within its intestines, and, when the animal is sick, this is ejected thence in large quantities.

THE DOLPHIN TRIBE.

THE Dolphins have teeth in both jaws; and the spiracle or breathing hole is on the anterior and upper part of the head.

THE PORPESSE.†

The Porpesse is well-known in all the European seas: in its general form it very much resembles the Dolphin; it is, however, somewhat less in size, and has a snout both much broader and shorter. It is generally from six to seven feet in length; thick in the fore-parts, and gradually tapering towards the tail. The colour is either a

* Crantz, i. 113.

† Synonyms.—Delphinus Phocœna. *Linn.*—Porpoise. *Kerr.*—Porpesse. *Penn.*—*Shaw's Gen. Zool. ii. tab.* 229.

bluish black, or a very dark brown above, and nearly white beneath.

These animals live chiefly on the smaller Fish, such as Mackerel and Herrings, which they pursue with much eagerness. They also root about the shores with their snout, in the manner of the Hog, in quest of food; and Mr. Ray says that in the stomach of one that he dissected he found several Sand-eels. They are often seen to gambol on the surface of the ocean, which is always looked upon as a sure sign of foul weather. They occasionally congregate in vast numbers.

In the river St. Lawrence, in Canada, these animals are very numerous; and, as they generally frequent the river in shoal water, in search of prey, the natives adopt the following method of catching them. When the fishing season arrives, the people collect together a great number of sallow twigs, or slender branches of other trees, and stick them pretty firmly into the sand banks of the river, which at low water are left dry: this is done on the side towards the river, forming a long line of twigs at moderate distances, which at the upper end is connected with the shore, an opening being left at the lower end that they may enter. As the tide rises, it covers the twigs, so as to keep them out of sight: the Porpesse, in quest of his prey, gets within the line, where he continues his chace till he finds, by the ebbing of the tide, that it is time to retire into deeper water. He now makes towards the river, but the twigs being then in part above water, and all agitated by the current, he no sooner sees them,

shaking about than he takes fright, and retreats backwards as far as he can from this tremendous rampart. The tide still continuing to ebb he returns time after time; but, never being able to overcome his dread of these terrific twigs, he rolls about until he is deserted entirely by the water; when those who placed the snare rush out in numbers, properly armed, and in this defenceless state overpower him with ease. In this manner more than a hundred of these huge creatures (one of which will yield about a hogshead of oil) have been killed at one tide.

The Porpesse was once considered as a sumptuous article of food, and is said to have been occasionally introduced at the tables of the old English nobility. It was eaten with a sauce composed of crumbs of fine bread, with sugar and vinegar. It is, however, now generally neglected even by the sailors.

In America the skin is tanned and dressed with considerable care. At first it is extremely tender and near an inch thick, but it is shaved down till it becomes somewhat transparent. It is made into waistcoats and breeches by the inhabitants; and is said also to make an excellent covering for carriages.

THE DOLPHIN.*

The body of the Dolphin is oblong and roundish, and the snout narrow and sharp-pointed, with a

* Synonyms.—Delphinus Delphis. *Linn.*—True Dolphin, *Kerr.*—Delphin. *Anderson.*—*Shaw's Gen. Zool.* ii. *tab.* 229.

broad transverse band, or projection of the skin on its upper part. It is longer and more slender than the Porpesse, measuring nine or ten feet in length, and about two in diameter. The body is black above and white below. The mouth is very wide, reaching almost to the thorax, and contains forty teeth; twenty-one in the upper and nineteen in the under-jaw, which lock into each other when the mouth is shut.

It inhabits the European and Pacific Oceans, where it swims with great velocity, and preys on Fish: and it is sometimes seen adhering to Whales when they leap out of the water. A shoal of Dolphins will frequently attend the course of a ship for the scraps that are thrown overboard, or the Bernacles adhering to their sides. Sir Hans Sloane was informed by some who had sailed in the Guinea ships, that the same shoal of Dolphins has attended them for many hundred leagues, between the coast of Guinea and Barbadoes: and Sir Richard Hawkins had them follow his ships above a thousand leagues; he knew them to be the same by the marks in their bodies, made by being struck with irons from the vessels.*

The Dolphin was in great repute among the ancients, and both philosophers and historians have contended who should relate the most absurdities concerning it. It was consecrated to the Gods, was celebrated for its love to the human race, and was honoured with the title of the Sacred Fish.

* Sloane, i 21.

Scarcely any accident could happen at sea, but the Dolphin was in waiting to rescue and carry on shore the unfortunate. Arion, the musician, when thrown overboard by the pirates, was indebted for his life to this benevolent animal.

> But, past belief, a Dolphin's arched back,
> Preserved Arion from his destined wrack;
> Secure he sits, and with harmonious strains,
> Requites the bearer for his friendly pains.*

How these absurd tales originated we are at a loss to suppose, for the Dolphins certainly exhibit no marks of peculiar attachment to mankind. If they attend on the vessels navigating the ocean it is in the expectation of plunder, and not of rendering assistance in cases of distress. By the seaman of the present day they are held rather in abhorrence than esteem, for their frolics on the surface of the water are almost the sure signs of an approaching gale.

The ancients invariably represent the Dolphin with its back greatly incurvated:

> Upon the swelling waves the Dolphins shew
> Their bending backs, then swiftly darting go,
> And in a thousand wreaths their bodies throw.

In their leaps out of the water they assume this form, but their natural shape is strait, the back being but very slightly incurvated.

They are said to change their colour before they die, and again after they are dead.

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* Transl. from Ovid. Fasti, lib. ii. 113.

The flesh was formerly held in great esteem, it is, however, though pretty well tasted, but dry and insipid: the best parts are near the head. It is seldom eaten now but when young and tender.

THE GRAMPUS.*

The Grampus is from twenty to twenty-five feet in length, of a very ferocious disposition, and feeds on the larger Fishes, and even on the Dolphin and Porpesse. It is said also to attack other Whales, and to devour Seals, which it occasionally finds sleeping on the rocks; dislodging by means of its back fin, and precipitating them into the water.

In its general form and colour it resembles the rest of the genus; but the lower jaw is much wider than the upper, and the body somewhat broader and deeper in proportion: the back-fin sometimes measures six feet in length. It is found in the Mediterranean seas, as well as in both the northern and southern oceans.

The Grampus is a decided enemy to the Whales: great flocks of them attack the largest of these animals, fastening round them like so many Bull-dogs, making them roar out with pain, and often killing and devouring them.

From their vast agility they are not often taken. They seldom remain a moment above water; but their eager pursuits sometimes throw them off their

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* Synonyms.—Delphinus orca. *Linn.*—Orca. Var.—Killer. *Catesby.* Grampus. *Penn.*——*Shaw's Gen. Zool.* ii. *tab.* 232.

guard, and allure them into the shallow waters. In this case the hungry animal frequently continues to flounder about, till either knocked on the head by those who consider themselves lucky enough to have observed it, or till the tide comes seasonably to its relief.

In one of the poems of Waller a story is recorded, (founded in fact) that beautifully illustrates their parental affection. A Grampus and her cub had got into an arm of the sea, where, by the desertion of the tide, they were inclosed on every side. The men on shore saw their situation, and ran down upon them with such weapons as they could at the moment collect. The poor animals were soon wounded in several places, so that all the immediately surrounding water was stained with their blood. They made many efforts to escape, and the old one, by superior strength, forced itself over the shallow into the deep of the ocean. But, though in safety herself, she could not leave her young one in the hands of assassins. She, therefore, again rushed in, and seemed resolved, since she could not prevent, at least to share the fate of her offspring. The story concludes with poetical justice; for the tide coming in, conveyed them both off in triumph.

The Whale-fishery.

In a commercial view the Whale tribe is of great importance to mankind, supplying us with those two valuable articles oil and whalebone, and like-

wise with spermaceti. They are chiefly taken in the northern seas.

The English send out with every ship six or seven boats: each of these has one harpooner, one man at the rudder, one manager of the line, and four seamen to row it. In each boat there are also two or three harpoons, several lances, and six lines, each a hundred and twenty fathoms long, fastened together.

As soon as the Whale is struck with the harpoon it darts down into the deep, carrying the instrument off in his body; and so extremely rapid is its motion that if the line was to entangle, it would either snap like a thread, or overset the boat. One man, therefore, is stationed to attend only to the line, that it may go regularly out, and another is now employed in continually wetting the place it runs against, that the wood may not take fire from the friction.—It is very wonderful that so large an animal should be able with such astonishing velocity to cut through the water, for his flight is as rapid as that of an Eagle.

When the Whale returns to breathe, the harpooner inflicts a fresh wound, till at length fainting from loss of blood, the men venture the boat quite up to him, and a long steeled lance is thrust into his breast, and through the intestines, which soon puts an end to his existence.

When the carcass begins to float, holes are cut in the fins and tail; and ropes being fastened into these, he is towed to the ship, where he is fastened

along the larboard side, floating with his back in the water.

The operation next to be performed is that of taking out the blubber and whalebone. Several men get upon the animal with iron calkers, or spurs, to prevent their slipping, and separate the tail, which is hoisted on deck; and they cut out square pieces of blubber, weighing two or three thousand pounds each, which, by means of the capstan, are also hoisted up. These are here cut into smaller pieces, which are thrown into the hold, and left for three or four days to drain. When all the blubber is cut from the belly of the Fish, it is turned on one side, by means of a piece of blubber left in the middle, called the cant, or turning piece. They then cut out this side in large pieces as before; and also the whalebone, with the gums, which are preserved entire, and hoisted on deck, where the blades are cut and separated, and left till the men have time to scrape and clean them. The Whale is next turned with its back upwards, and the blubber cut out from the back and crown bone: they conclude the whole by cutting the blubber from the other side. But previously to letting the remainder of the body float away they cut out the two large upper-jaw bones, which are hoisted on deck, cleansed and fastened to the shrouds, and tubs are placed under them to receive the oil which they discharge. This oil belongs to the captain.

In three or four days they hoist the pieces of blubber out of the hold, chop, and put them by small pieces through the bung-holes into the casks.

A Whale, the longest blade of whose mouth measures nine or ten feet, will yield about thirty butts of blubber; but some of the largest will yield upwards of seventy. One of the latter is generally worth about 1000*l.* sterling: and a full ship, of three hundred tons burthen, will produce more than five thousand pounds from one voyage.

Premiums on every Whale that is taken, are given to all engaged, from the captain to the men who row the boats, which render them active in the service of their employers.

To give our readers some idea of the produce of the Whale-fishery we shall make choice of the fishery of the year 1697, as perhaps the most fortunate that ever was known.

In this year there were a hundred and eighty-nine vessels of different nations; of which a hundred and twenty-one were Dutch, forty-seven from Hamburgh, two Swedish, four Danish, twelve from Bremen, two from Embden, and one from Lubec; which caught in all 1968 fish.

The following was the number of puncheons of blubber produced.

By the Dutch captures - - - - -	41,344
——— Hamburgers - - - - - -	16,414
——— Swedes - - - - - - -	540
——— Danes - - - - - - - -	1,710
——— Bremeners - - - - - -	3,790
——— Embdeners - - - - - -	68
Total	63,866

Estimating the whalebone at about two thousand

weight for every Whale, there must have been in the whole not far short of 4,000,000 weight.

Mr. Anderson, in his Natural History of Iceland and Greenland, observes, from an account of the Dutch Whale-fishery for forty-six years, ending in 1721, that in this time they had employed 5886 ships, and caught 32,907 Whales; which, valued one with another at 500*l.* each, give an amount for the whole value of above sixteen millions sterling, gained out of the sea, mostly by the labour of the people, deducting the expence of the wear and tear of shipping, the casks, and the provisions.

The Whale-fishery begins in May, and continues through the months of June and July; but whether the ships have had good or bad success, they must come away, and get clear of the ice by the end of August; so that in the month of September at furthest they may be expected home; but the more fortunate ships often return in June or July.

BIRDS.

IN the structure, habits of life, and destination of no animals whatever are we more led to admire the wisdom of a Supreme Being, than in those of the different feathered tribes, which are in every respect fitted most exactly to the various functions they have to perform.—Their bodies are clad with feathers, which are much lighter than coverings of hair, and, therefore, better calculated for assisting them in flight: and these lay over each other, close to the body, like the tiles of a house, and are arranged from the fore-part backwards, the more conveniently to cut through the air. For the purpose of giving warmth to the body, a short and extremely soft down fills up all the vacant spaces between the shafts of the feathers. The bones of birds are also much lighter in proportion to their size than those of quadrupeds.

That they may the more easily work their way through the air, the head is small, and the bill generally somewhat wedge-shaped. The neck is long, and easily moveable in all directions; and the body is slender, sharp on the under side, and flat or round on the back.

They urge themselves forward by means of wings: these are so constructed, that, in striking down-

wards, they expand very greatly, and, except that they are somewhat hollow on the under side, they become, in this act, almost two planes. The muscles that move them downwards are exceedingly large, and have been estimated, in some instances, to constitute not less than a sixth part of the weight of the whole body. When a bird is on the ground and intends to fly, he takes a leap, stretches his wings from the body, and strikes them downwards with great force, by which they are put into an oblique direction, partly upwards and partly horizontally forwards. That part of the force tending upwards is destroyed by the weight of the bird; and the horizontal force serves to carry him forward. The stroke being over, he moves up his wings; which, being contracted, and having their edges turned upwards, meet with very little resistance from the air. When they are sufficiently elevated, he takes a second stroke downwards, and the impulse of the air again moves him forward: these strokes act only as so many leaps taken in the air. When the bird wants to turn to the right or left, he strikes strongly with the opposite wing, which impels him to the contrary side. The tail acts like the rudder of a ship; except only that it moves him upwards or downwards, instead of sideways. If the bird wants to rise, he raises his tail; and if to fall, he depresses it: whilst he is in an horizontal position, it keeps him steady.

A bird can, by spreading his wings, continue to move horizontally for some time, without striking the air, because he has acquired a sufficient velocity,

and, his wings being parallel to the horizon, meet with but small resistance; and, when he begins to fall, he can easily steer himself upwards by his tail, till the motion he had acquired is nearly spent, when he must renew it by two or three more strokes of his wings. On alighting, he expands his wings and tail full against the air, that they may meet with all the resistance possible.

The centre of gravity of birds is rather behind the wings; and, to counterbalance this, most of them may be observed to thrust out their head and neck in flying. This is very apparent in the flight of Ducks, Geese, and several other kinds of water-fowl, whose centre of gravity is farther backwards than in the land birds. In the Heron, on the contrary, whose long head and neck, although folded up in flight, overbalance the rest of the body, the long legs are extended, in order to give the proper counterpoise, and to supply what is wanting from the shortness of the tail.

Somewhat more than a century ago, many attempts were made to enable man to raise himself into the air by means of artificial wings. This idea, however, was extremely absurd. The pectoral muscles of man are vastly too weak for the purpose, being not a sixtieth part of the muscles of the body, while those of a bird are equal, if not greater, than all the others put together.

We are informed that some birds are able to fly upwards of a thousand yards in a minute.

Lest the feathers of these tribes should spoil by their attrition in the air, or imbibe the moisture of

the atmosphere, they are provided with two glands on the rump, that contain a quantity of oil, which they express at pleasure, and with which they regularly prune and dress their feathers when they want it.

As these animals are continually passing among hedges and thickets, they are, for the defence of their eyes, from external injuries, as well as from too much light, when flying in opposition to the rays of the sun, furnished with a nictating or winking membrane, which, like a curtain, can at pleasure be drawn over the whole eye. This covering is neither opake nor pellucid; but, being somewhat transparent, it allows as many rays to enter, as render any object just visible, and enables them to direct their progress through the air. It is by the instrumentality of this membrane that the Eagle is said to look at the sun.

Birds *respire* by means of air-vessels, that are extended through the whole body, and adhere to the under surface of the bones. These, by their motion, blow the air through the true lungs, which are very small, (somewhat of the shape of the human lungs) and seated in the very uppermost part of the chest, closely braced down to the back and ribs. The latter, which are never expanded by air, are destined for the sole purpose of oxydating the blood. Mr. John Hunter made a variety of experiments to discover the use of this general diffusion of air through the bodies of birds; and from these we find, that it prevents their respiration from being stopped or interrupted by the rapidity of their motion through a resisting medium. The resistance of the air in-

creases in proportion to the celerity of the motion; and were it possible for a man to move with a swiftness equal to that of a Swallow, the resistance of the air, as he is not provided with reservoirs similar to those of birds, would soon suffocate him.

The abode of these tribes is very various, as they inhabit every corner of the world, from the hottest to the coldest regions. Some species are confined to particular countries—others are widely dispersed —and many change their abode at certain seasons of the year, and *migrate* to climates better suited to their temperament or mode of life, for some time ensuing, than those they leave. Many of the birds of our own island, directed by a peculiar and unerring instinct, retire, before the commencement of the cold season, to the southern parts of Africa, and again return in the spring. The reasons usually assigned for migration are, either a defect of food, or the want of a secure and proper asylum for incubation, and the nutrition of their young. They generally perform their migrations in large societies, and, in the day, follow a leader, who is occasionally changed. Many of the tribes make a continual cry during the night in order to keep themselves together. Thus they

> Rang'd in figure, wedge their way; and set forth
> Their airy caravan, high over seas
> Flying, and over lands with mutual wing
> Easing their flights.

The flights of birds across the Mediterranean were recorded near three thousand years ago. "There went forth a wind from the Lord, and brought Quails

from the sea, and let them fall upon the camp, a day's journey round about it, and they were two cubits above the earth."*

The following is a table of the migration of several of the British birds, taken on the average of about twenty-six years, from the observations of Mr. Markwick, inserted in the first and fourth volumes of the Linnean Transactions.

		First seen.	*Last seen.*
Swallow	Hirundo rustica	April 18	Oct. 31
Martin	Hirundo urbica	May 4	Oct. 16
Sand Martin	Hirundo riparia	May 26	Sept. 12
Swift	Hirundo apus	May 9	Sept. 30
Goatsucker	Caprimulgus europæus	Sept. 7	Sept. 27
Turtle Dove	Columba turtur	June 5	Aug. 10
Wryneck	Yunx torquilla	April 26	Sept.
Cuckoo	Cuculus canorus	May 1	July 10
Nightingale	Motacilla luscinia	April 25	Sept. 20
Blackcap	Motacilla atricapilla	May 10	Sept. 18
White-throat	Motacilla sylvia	April 22	Sept. 16
Wheat-ear	Motacilla œnanthe	May 4	Sept. 26
Whinchat	Motacilla rubetra	June 1	Sept. 21
Redstart	Motacilla phœnicurus	April 24	Sept. 1
Willow-wren	Motacilla trochilus	April 23	Sept. 24
Flycatcher	Muscicapa grisola	May 8	Sept. 30
Red backed Shrike	Lanius collurio	June 1	Aug. 16
Land-rail	Rallus crex	Sept. 1	Oct. 20
Quail	Tetrao coturnix	Aug. 20	
Fieldfare	Turdus pilaris	Nov. 21	April 10
Redwing	Turdus iliacus	Nov. 10	March 18
Woodcock	Scolopax rusticola	Oct. 20	April 1
Snipe	Scolopax galinago	Nov. 20	March 20
Jack Snipe	Scolopax gallinula	Dec. 26	March 16
Sea Lark	Charadrius hiaticula	April 1	
Greater Tern	Sterna hirundo	April 1	Oct. 8

* Numbers, chap. 2. ver. 31.

Lesser Tern	Sterna minuta	May 20	Oct. 16
Royston Crow	Corvus cornix	May 22	March 26*

It appears from very accurate observations, founded on numerous experiments, that the peculiar notes, or *song*, of the different species of Birds, are altogether acquired, and are no more innate than language is in man. The attempt in a nestling bird to sing, may be exactly compared with the imperfect endeavour of a child to talk. The first essay seems not to possess the slightest rudiments of the future song; but, as the bird grows older and stronger, it is not difficult to perceive what it is aiming at.—Whilst the scholar is thus endeavouring to form his song, when he is once sure of a passage, he commonly raises his tone, which he drops again when he is not equal to what he is attempting. What the nestling is thus not thoroughly master of, he hurries over, lowering his tone, as if he did not wish to be heard, and could not yet satisfy himself.—A common Sparrow, taken from the nest when very young, and placed near a Linnet and Goldfinch, (though in a wild state it would only have chirped) adopted a song that was a mixture of these two. Three nestling Linnets were educated, one under a Skylark, another under a Woodlark, and the third under a Titlark, and, instead of the song peculiar to their own species, they adhered entirely to that of

* These observations were made in Sussex. The times when the birds were both first and last seen, sometimes vary very considerably, owing, in a great measure, to the difficulty of always seeing them on their immediate arrival, and the impossibility of ascertaining the departure of the last of the species.

their respective instructor. A Linnet, taken from the nest when but two or three days old, and brought up in the house of Mr. Mathews, an apothecary, at Kensington, from want of other sounds to imitate, almost articulated the words "pretty boy," as well as some other short sentences. Its owner said, that it had neither the note nor the call of any bird whatever. It died in the year 1772. These, and other well authenticated facts, seem to prove decisively that birds have no innate notes, but that, like mankind, the language of those to whose care they are committed at birth will be the language they adopt in after life. It may, however, seem somewhat unaccountable from these observations, why, in a wild state, they adhere so steadily to the song of their own species only, when so many others are to be heard around them. This arises from the attention paid by the nestling-bird to the instructions of its own parent only, generally disregarding the notes of all the rest; but persons who have an accurate ear, and have studied the notes of different Birds, can very often distinguish birds that have a song mixed with those of some other species; but these are in general so trifling, as scarcely to be looked upon as any thing more than the mere varieties of provincial dialects.

It may not be altogether uninteresting to the English reader to be furnished with a table of the comparative merits of the singing-birds of his own island. In this the number 20 is adopted as the point of absolute perfection.

	Mellowness of Tone.	*Sprightly Notes.*	*Plaintive Notes.*	*Compass.*	*Execution*
Nightingale	19	14	19	19	19
Skylark	4	19	4	18	18
Woodlark	18	4	17	12	8
Titlark	12	12	12	12	12
Linnet	12	16	12	16	18
Goldfinch	4	19	4	12	12
Chaffinch	4	12	4	8	8
Greenfinch	4	4	4	4	6
Hedge-sparrow	6	0	6	4	4
Aberdavine, or Siskin	2	4	0	4	4
Redpoll	0	4	0	4	4
Thrush	4	4	4	4	4
Blackbird	4	4	0	2	2
Robin	6	16	12	12	12
Wren	0	12	0	4	4
Reed-sparrow	0	4	0	2	2
Black-cap or the Norfolk Mock-nightingale	14	12	12	14	14

In this table no mention is made either of the Bullfinch, or the Redstart, as the wild note of the first (though commonly considered as a singing-bird) is, without instruction, a most jarring and disagreeable noise; and the latter is omitted, as the composer of the table was not sufficiently acquainted with its song to be able to estimate it aright.

The *food* of Birds is, of course, very different in the different kinds. Some are altogether carnivorous; others, as many of the web-footed tribes, live on fish; some on insects and worms, and many on fruits or grain. The extraordinary powers of the gizzard in the granivorous tribes, in comminuting their hard food, so as to prepare it for digestion, would, were they not supported by incon-

trovertible facts, founded upon experiment, appear to exceed all credibility. In order to ascertain the strength of these stomachs, the ingenious Spallanzani made many excessively cruel, though at the same time curious and very interesting experiments. Tin tubes full of grain were forced into the stomachs of Turkies, and, after remaining twenty hours, were found to be broken, compressed, and distorted in the most irregular manner. The stomach of a Cock, in the space of twenty-four hours, broke off the angles of a piece of rough jagged glass; and, upon examining the gizzard, no wound or laceration appeared. Twelve strong tin needles were firmly fixed in a ball of lead, the points of which projected about a quarter of an inch from the surface; thus armed it was covered with a case of paper, and forced down the throat of a Turkey: the Bird retained it a day and a half without exhibiting the least symptom of uneasiness: the points of all the needles were broken off close to the surface of the ball, except two or three, of which the stumps projected a little. Twelve small lancets, very sharp both at the points and edges, were fixed in a similar ball of lead, which was given in the same manner to a Turkey-cock, and left eight hours in the stomach; at the expiration of which time that organ was opened, but nothing appeared except the naked ball, the twelve lances having been broken to pieces, the stomach at the same time remaining perfectly sound and entire. From these facts it was concluded that the stones so often found in the stomachs of many of the feathered tribes are

highly useful in assisting the gastric juices to grind down the grain and other hard substances which constitute their food. The stones themselves also being ground down and separated by the powerful action of the gizzard, are mixed with the food, and no doubt contribute very greatly to the health as well as to the nutriment of the animals.

All Birds are oviparous, or produce *eggs*, from which, after the process of incubation, or sitting for a certain length of time, the young are extruded. These eggs differ in the different species, both in number, figure, and colour. They contain the rudiments of the future young, for the maturation and bringing to perfection of which, in the incubation, a bubble of air is always placed at the large end, betwixt the shell and the inside skin. It is supposed that from the warmth communicated by the sitting Bird to this confined air its spring is increased beyond its natural tenor, and at the same time its parts are put into motion by the gentle rarefaction. Hence pressure and motion are communicated to the parts of the egg, which in some unknown manner gradually promote the formation and growth of the young till the appointed time of its exclusion. Women, when they suspect an egg is not good, put their tongue to the great end to feel if it be warm: if that is not the case, it is considered a certain proof that the air, having by degrees made its escape, the egg is at length become putrid or addled.* The use of that part of the egg

* M. Reamur, the celebrated French naturalist, who seldom confined

called the treddle is not only to retain the different liquids in their proper places, but also to keep the same part of the yolk always uppermost, which it will do, though the egg be turned nearly any way. The mechanism seems to be this: these treddles are specifically lighter than the whites in which they swim; and, being connected to the membranes of the yolk somewhat out of its axis, causes one side to become heavier than the other: in this manner the yolk, being made buoyant in the midst of the white, is, by its own heavy side, kept with the same part always uppermost.

The *nests* of Birds are, in general, constructed with astonishing art, and with a degree of architectural skill and propriety that would foil all the boasted talents of man, the haughty lord of the creation, to imitate.

> Mark it well, within, without
> No tool had he that wrought, no knife to cut,
> No nail to fix, no bodkin to insert,
> No glue to join; his little beak was all.
> And yet how neatly finish'd. What nice hand
> With ev'ry implement and means of art,
> And twenty years apprenticeship to boot,
> Could make me such another? Fondly then
> We boast of excellence whose noblest skill
> Instinctive genius foils.

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speculations to mere curiosity, has shewn that, by stopping up the pores of an egg with varnish or a slight covering of mutton suet, it may be preserved perfectly fresh, and generally even fit for incubation, five or six months after it has been laid.

Both the male and female generally assist in this interesting concern. They each bring materials to the place, first sticks, moss, or straws for the foundation and exterior, then hair, wool, or the down of animals or plants, to form a soft and commodious bed for their eggs, and the bodies of their tender young when hatched. The outsides of the nests bear in general so great a resemblance in colour to the surrounding foliage or branches as not easily to be discovered even by those who are in search of them.

This act of nidification is one of those wonderful contrivances of nature that would compel us, however we might otherwise be inclined to doubt it, to believe that we, and every other part of the creation, are ever under the protection of a superintending Being, whose goodness knows no bounds. Without this what can we suppose it is that instigates a creature, that may never before have had young, to form a hollow nest to contain eggs (things that as yet it knows nothing of,) and to concentrate a proper portion of heat for the incubation? Without this what can we suppose it is that dictates to it the necessity of forming the outside with coarse materials, as a foundation, and o lining it within with more delicate substances Where do these animals learn that they are to ha eggs, and that these eggs will require a nest a certain size and capacity? Who is it that teac them to calculate the time with such exactness t they never lay their eggs before the receptacle them is finished? No one can surely be so b

as not to discern by all these acts, that the care of a Supreme Being is immediately employed in the preservation, the support and comfort of even this inferior order of his creation.

This class of the Animal Creation may be divided into LAND BIRDS and WATER BIRDS: the first division containing the Linnean orders of Rapacious Birds, the Pies, the Passerine, and Gallinaceous Birds; and the second the orders of Waders and Swimmers.*

The characters of these orders are principally taken from the manner of life, and the natural resemblance of the external parts of the animals, and particularly of the bill.

LAND BIRDS.

1. *Rapacious Birds.*—The bill is somewhat hooked, having the upper mandible either dilated a little towards the point, or furnished with a tooth-like process: the nostrils are open. The feet are stout, and armed with strong hooked claws, three forwards and one backwards.—The animals of this order are the Vultures, Eagles, or Hawks, and Owls: they live by preying on other animals, in consequence of which their flesh is too rank to be eaten. They associate in pairs, build their nests in lofty places, and usually produce four young at a

* Accipitres, Picæ, Passeres, Gallinæ, Grallæ, and Anseres.

brood. The female is generally both larger and stronger than the male.

2. *Pies.*—The bill is sharp-edged and convex on its upper surface. The legs are short, pretty strong, and in some species formed for perching (that is with three toes forward, and one backward,) in others formed for climbing, with two toes forward and two backwards, and in others for walking, that is without any back toe.—The principal genera are the Shrikes, Crows, Rollers, Orioles, Grackles, Humming-birds, Parrots, Toucans, Cuckoos, Woodpeckers, Hornbills, and Kingfishers.—They live on various kinds of food, and are in general reckoned unfit for the table. Some of them associate in pairs, and others congregate. They usually build their nests on trees, and the male feeds the female during the process of incubation.

3. *Passerine Birds.*—The bill is of a conical form, and pointed at the end: and the feet are formed for perching and hopping, the toes being slender and divided, with slender, bent, and sharp claws.—Of this order the principal genera are the Finches, Grossbeaks, Buntings, Thrushes, Flycatchers, Swallows, Larks, Wagtails, Titmice, and Pigeons. While breeding they live mostly in pairs, building, in various situations, nests that are in general of singular and curious construction. They feed their young by pushing the food down their throats with their own bills. Most of them sing. Some live on seeds, and others on insects: the former are reckoned good food, but the insect eating species are never eaten.

4. *Gallinaceous Birds.*—The bill is convex, the upper mandible lying in an arch over the lower; and the nostrils are arched over with a cartilaginous membrane. The feet are formed for running, without a back toe, and the toes are rough underneath.—The principal genera are, the Pheasants, Turkies, Peacocks, Bustards, Pintados, Grouse, and Partridges. They live mostly on the ground, scraping the earth with their feet, and feeding on grain and seeds, which are macerated in a crop before digestion. They associate chiefly in families, consisting of one male and several females, forming their nests, with very little art, on the ground; and the females lay a great number of eggs: these generally lead their young ones very early in quest of food, which they point out to them by a particular call. Their flesh is much esteemed.

WATER BIRDS.

5. *Waders.*—The bill is somewhat cylindrical. The thighs are feathered only half way to the knees; and the legs are longish, and formed for walking. The chief genera are the Herons, Plovers, Snipes, and Sandpipers.—They live for the most part among marshes and fens, feeding on worms, and other animal productions that they meet with there: they form their nests on the ground, and live, some in pairs and others promiscuously. Their flesh is generally reckoned delicate eating.

6. *Swimmers.* The bill is smooth, obtuse at the point, and covered with a membranaceous skin.

The legs are short and compressed, and the feet formed for swimming, the toes being connected by a membrane.—Of this order the most familiar genera are the Ducks, Auks, Penguins, Petrels, Pelicans, Guillemots, Gulls, and Ferns. These live chiefly in the water, feeding on Fish, Worms, and aquatic plants. They are for the most part polygamous, and make their nests among reeds or in moist places. The young, though soon able to seek their own food, are for some time, at first, led about and protected by the mother. The females lay many eggs, and are fed by the males while sitting. The flesh of many of the species is eatable, but that of some of them is rank and oily.

LAND BIRDS.

THE VULTURE TRIBE.*

IN this tribe, the individuals of which are the most ravenous of all the feathered race, the bill is straight, and hooked only at the end; its edges are sharp like a knife, and the base is covered with a thin skin. The head, cheeks, and, in many species, the neck, are either naked, or covered only with down or short hairs. The tongue is large, fleshy, and cleft at the end. The craw often hangs over the breast. The legs and feet are covered with great scales; and the first joint of the middle toe is connected to that of the outermost by a strong membrane. The claws are large, a little hooked, and very blunt: and the insides of the wings are covered with down.

The characters that principally distinguish this from the following tribe are the want of feathers on part of the head, and sometimes even on the whole head and neck; and the voracious manners

* The first order of Linnæus, the RAPACIOUS BIRDS, commences with the Vultures.

of the animals composing it, since they never kill prey from *choice*, but in general devour only such animals as are either dying or found dead and putrid. Their sense of smelling is so exquisite that they are able to scent a dead body to the distance of many miles. "They are (says Mr. Pennant) greedy and voracious to a proverb, and not timid, for they prey in the midst of cities, undaunted by mankind." In some of the battles in the East, where vast slaughter takes place of Elephants, Horses, and Men, voracious animals crowd to the field from all quarters, of which Jackals, Hyænas, and Vultures, are the chief. Even in the places where the latter are usually seldom seen, the plain will on these occasions be found covered with them. In the air vast multitudes will be seen descending from every side to partake in the carnage. These the Indians believe to be brought by an instinctive presentiment of slaughter that they have some days before the event.

It is observed that Vultures, in general, are least numerous in proportion to the coldness of the climate; and that in the more northern climates they are never found. This is undoubtedly a most kind diposition of Providence, to prevent the putrid effluvia of the dead, in the hotter regions, from too much injuring the health of the living.

There are, in the whole, about seventeen species.

THE CONDUR.*

This bird, an inhabitant of South America, is of a size considerably larger than that of the Eagle. Its wings extend eighteen feet; its body, bill, and talons are proportionably large and strong; and its courage is equal to its strength. The throat is naked and of a red colour. The upper parts in some, for they differ in colour, are variegated with black, grey, and white, and the belly is scarlet. The head of a Condur, that was shot at Port Desire, off Penguin Island, resembled that of an Eagle, except that it had a large comb upon it. Round the neck it had a white ruff, exactly resembling a lady's tippet. The feathers on the back were as black as jet, and perfectly bright. The legs were remarkably strong and large, the talons like those of an Eagle, except that they were not so sharp; and the wings, when extended, measured, from point to point, twelve feet.† In the Leverian Museum there are two specimens of the Condur, supposed to be male and female; on the breast they have a kind of pendulous, pear-shaped substance: the male measures ten feet from tip to tip of the wings.

Of the strength of the Condur we may form some idea from the following account of one shot by Father Feuillée: "The Condur (says this writer) is

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* Synonyms.—Vultur Gryphus. *Linn.*—Magellanic Vulture. *Shaw's Trav.*—Manque, by the inhabitants of Chili.—Condur.—*Latham.*—*Latham's Second Supplement, fig.* 1.

† Hawksworth's Voyages.

a bird of prey that inhabits the valley of Ylo in Peru. I discovered one that was perched upon a great rock: I approached it within musket-shot and fired, but, as my piece was only loaded with swan-shot, the lead could not do much more than pierce its feathers. I perceived, however, from its motions, that it was wounded: for it rose heavily, and could with difficulty reach another great rock, five hundred paces distant, upon the sea-shore. I, therefore, charged my piece with a bullet, and hit the Bird under the throat. I then saw that I had succeeded, and ran to secure the victim; but it struggled obstinately with death, and, resting upon its back, repelled my attempts with its extended talons. I was at a loss on what side to lay hold of it; and I believe that if it had not been mortally wounded, I should have found great difficulty in securing it. At last I dragged it down from the top of the rock, and, with the assistance of a sailor, carried it away to my tent."

Some writers have affirmed that the Condur is twice as large as the Eagle, and so strong that it can pounce and devour a whole Sheep; that it spares not even Stags, and easily overthrows a man. Others again say that its beak is so firm that it can pierce a Cow's hide, and that two of them are able to kill the animal and devour the carcase.*

Ulloa tells us, that he once saw, in South America, a Condur seize and fly away with a Lamb. "Observing (says he) on a hill adjoining to that

* Buffon's Birds.

where I was, a flock of Sheep in great confusion, I saw one of these birds flying upwards from it with a Lamb betwixt its claws; and, when at some height, it dropped it; then, following, took it up and let it fall a second time, when it flew out of sight, on account of the Indians, who, at the cries of the boys and barking of the Dogs, were running towards the place."*

Frezier, in a voyage to the South Seas, also thus describes the Condur:—"We one day killed a bird of prey called the Condur, which was nine feet from the end of one wing to the end of the other, and had a brown comb or crest, but not jagged like a Cock's: the fore-part of its throat is red, without feathers, like a Turkey; and they are generally large and strong enough to take up a Lamb. In order to get these from the flock they draw themselves into a circle, and advance towards them with their wings extended, that being driven too close together they may not be able to defend themselves; they then pick them out and carry them off. Garcilasso says, there are some Condurs in Peru sixteen feet from the point of one wing to the other, and that a certain nation of Indians adore them."

These enormous animals make their nests among the highest and most inaccessible rocks; and the female lays two white eggs, somewhat bigger than those of the Turkey.

In the country that they inhabit they seem to supply the place of Wolves, and are as much feared

* Ulloa's Voyage to South America.

by the inhabitants as Wolves would be. In consequence of this many modes of destroying them are of course adopted. Sometimes a person, covering himself with the hide of a newly skinned animal, goes out, and so manages it, that the Bird will frequently attempt to attack it: other persons that have hidden themselves, then come forward to his assistance, and all at once falling on the Bird, overcome it. A dead carcass is also sometimes put within a very high inclosure, and when the Condur has satiated himself, and is unable to rise freely, persons are in readiness to subdue him. On these occasions the Bird is inactive; but in general he possesses a very quick flight, soaring frequently to a height beyond the reach of human vision.* Sometimes they are caught by means of springs.

It has been generally imagined that this dreadful animal gave rise to the exaggerated description of the Bird that makes so conspicuous a figure in the Arabian Tales, under the name of *Roc*: but this seems very improbable, as we have no satisfactory evidence of the Condur's having been ever found on the old Continent. We are rather inclined to suppose that the traditions respecting the Roc originated in a very different Bird, a variety of the Bearded Eagle, or the well-known Lammer-geyer of the Alps,† which is occasionally seen among the mountains of the East.

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* Latham's Second Supplement. † Falco Barbatus of Linnæus.

THE CARRION VULTURE.*

This Bird, which is very common in many of the warmer parts both of Europe, Asia, and America, is totally unknown in England. Its length is about four feet eight inches, and general weight betwixt four and five pounds. It head is small, and covered with a red skin, beset only with a few black bristles, which gives it a distant resemblance to a Turkey.—The whole plumage is dusky, mixed with purple and green. The legs are of a dirty flesh-colour, and the claws black.†

The resemblance of these Birds at a distance to the Turkey, was the cause of considerable chagrin to one of the officers engaged in the expedition round the world, under Woodes Rogers. In the island of Lobos immense numbers of them were seen, and, highly delighted with the prospect of such delicious fare after a long and tedious voyage, the officer would not wait even till the boat could put him ashore, but, with his gun in his hand, leapt overboard and swam to land. Getting near a large collection of them, he let fly among them, and killed several; but when he came to seize his game, he was miserably disappointed in finding that they were not Turkies; and their stench was (to add still more to his chagrin) almost insupportable.‡

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* Synonyms.—Vultur Aura. *Linn.*—Vautour de Brésil. *Buff.*—Turkey Buzzard. *Catesby.*—Carrion Crow. *Sloane.*—Strunt-vogel? *Kolben.*—Carrion Vulture. *Latham.*

† Penn. Arct. Zool.

‡ Woodes Rogers, 148.

Their bodies are extremely offensive to the smell, and they perch at nights on rocks or trees, with their wings partly extended, apparently to purify themselves. They soar to a vast height, and have in the air the sailing motions of the Kite. Carrion and filth of almost every description are their favourite food; and, from the fineness of their scent, they can distinguish prey at an immense distance. They will eat even snakes, and sometimes seize on live Lambs. When a dead body of any size is thrown out, they may be observed coming from all quarters, each wheeling about in gradual descent till he reaches the ground. They are not easily driven from their prey, and, when in the act of devouring, will suffer persons to approach very near them.*

In some parts of the torrid zone they haunt the towns in immense multitudes. In Carthagena they may be seen sitting on the roofs of the houses, or even stalking along the streets. They are here of infinite service to the inhabitants, devouring that filth which would otherwise, by its intolerable stench, render the climate still more unwholesome than it is.—When they find no food in the cities, they, however, seek for it among the cattle of the adjoining pastures. If any animal is unfortunate enough to have a sore on its back, they instantly alight on it, and attack the part affected. The poor creature may in vain attempt to free itself from the gripe of their talons: even rolling on the ground is of no effect, for the Vultures never quit their hold till they have completed its destruction.

* Catesby, i. 6.

In few creatures are the designs of Providence more clearly developed than in this. Filthy as they are both in their manners, their appearance, and their smell, yet is even this filthiness a blessing to mankind. In hot countries, where putridity takes place in a few hours after death, what must become of the united stench, if it were not for the exertions of animals of this description? But in some countries it renders itself even of still further consequence, by destroying the eggs of the Alligator, an animal which must otherwise become intolerable by its prodigious increase. It watches the female in the act of depositing her eggs in the sand, and no sooner does she retire into the water, than it darts to the spot, and gluts itself with their contents.

It is either the Birds of this, or some species nearly allied to it, that Kolben has mentioned as frequenting many parts about the Cape of Good Hope. He says that they discover infinite dexterity in anatomizing a dead animal. They separate the flesh from the bones in such a manner as to leave the skin almost entire. On approaching a body thus destroyed, no one, till he had examined it, could possibly imagine that it was merely bone and skin, deprived entirely of the internal substance. They begin by tearing an opening in the belly, through which they pluck out and greedily devour the entrails: then entering the hollow, they also tear away all the flesh, and this without affecting the external appearance. "It often happens (says this writer) that an ox returning home alone to its stall from the plough, lies down by the way: it is then, if the Vultures perceive it, that they fall

upon it with fury, and inevitably devour the unfortunate animal. They sometimes attempt them while grazing in the fields; and then, to the number of a hundred or more, make their sudden attack all together."*

The sloth, the filth, and the voracity of these birds, almost exceed credibility. Whenever they alight on a carcass that they can have liberty to tear at their ease, they gorge themselves in such a manner that they are unable to fly, and only hop along when pursued. At all times they are Birds of slow flight, and unable readily to raise themselves from the ground; and, when they have overfed, they are utterly helpless. But they can soon get rid of their burthen; for in danger they have a power of vomiting up what they have eaten, and they then fly off with greater facility.

THE AQUILINE VULTURE.†

These disgusting animals frequent Cairo in great flocks, feeding on the offal and dead animals in the streets promiscuously with the Dogs. Every morning and evening they assemble with the Kites, in the square below the castle, to receive the alms of fresh meat that have been left to them by the legacies of various wealthy men.

Their appearance is as horrid as can be imagined

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* Kolben, ii. 135.

† SYNONYMS.—Vultur Percnopterus. *Linn.*—Sacred Egypte. *Buff.*—Vulturine Eagle. *Willughby.*—Rochœme, by the Arabs.—Alpine Vulture. *Latham.*—Aquiline Vulture. *Kerr.*

in any animal. The head and neck are naked and wrinkled, the eyes are large and black, the beak is black and hooked, the talons are large and extended, and the whole body covered, from their habits of life, with filth. Notwithstanding this, the inhabitants of Egypt cannot be sufficiently thankful to Providence for allowing them these birds to carry off every thing that would otherwise putrify, and fill the air with noxious exhalations.

They are so little alarmed at mankind, that they will not quit the places they frequent although they are fired at with a gun, but after a short flight return immediately. If one of them is killed, the rest surround and devour it.

The inhabitants say that some of them follow the caravan every year to Mecca, in order to feast upon the flesh of slaughtered beasts, and the carcasses of the Camels that die on the journey.*

In Palestine these animals are of infinite service, in destroying the vast multitudes of mice which swarm in the fields, and which, without their assistance, would devour the whole fruits of the ground.†

THE FALCON TRIBE.

THIS, as well as the last, is a most rapacious tribe of animals. They exist altogether on animal food,

* Hasselquist, 194. † Kerr, i. 475.

but seldom feed on carrion, except when urged by excessive hunger; and they are able to sustain hunger for a very great length of time, often taking in as much food at once as will last them for several days without a fresh supply. Many of the species eat fish, and others are content with snakes and reptiles.

They never congregate, and, except during the breeding season, even two of them are seldom seen together. They are very quick-sighted; and soar to amazing heights in the air. When they discern their prey, they dart themselves down upon it with the swiftness of an arrow: and their strength is so great, that some of them have been known to carry to their young, birds nearly as heavy as themselves, from a distance of forty miles, and even more. Most of them build their nests on lofty and inaccessible places; but a few of the species form them on the ground. In general the females are much larger than the males, for the purpose, as some have conjectured, of more easily providing food for their young.

The bill is hooked, and furnished at the base with a naked membranaceous skin, called the cere. The head and neck are thickly beset with feathers. The nostrils are small, and placed in the cere; and the tongue is broad, fleshy, and generally cleft at the end. The legs and feet are strong, muscular, and scaly; and, from their large, hooked, and very sharp claws, well calculated for the predacious mode of life of the animals. The middle toe is connected to

the outermost by a strong membrane, and the claw of the outer toe is less than that of any other.

This tribe differs from the last principally in having their bill and claws much more hooked and sharp; in having the head and neck in general thickly covered with feathers, instead of being naked, or covered only with down; and also in their usually killing their prey and eating it while fresh. The exuviæ and bones of their food they always emit at the mouth, in the form of round pellets.

About a hundred and forty different species have been discovered, of which upwards of twenty are natives of these kingdoms; but from the extreme difference in appearance betwixt many of the males and females of the same species, it is frequently found difficult to ascertain them.

THE SECRETARY FALCON.*

In its external appearance this Bird (though in an artificial system it is with propriety arranged immediately after the Vultures) resembles in some respects both the Eagle and the Crane, two Birds much unlike each other; having the head of the former, and somewhat the form of the body of the latter. When standing erect it is full three feet from the top of the head to the ground. The bill is black, sharp, and crooked, like that of an Eagle. The cere is white; and round the eyes is a place bare of feathers, and of a deep orange-colour. The upper eye-lids are

* Synonyms.—Falco Serpentarius. *Linn.*—Secretaire. *Sonnerat.*—Secretary Vulture. *Lath.*—Secretary. *Kerr.*——*Latham's Syn. vol.* i. *tab.* 2.

beset with strong bristles, like eye-lashes. Its general colour is a blueish ash-colour, and the ends of the wings, the thighs, and vent, are blackish. The tail is somewhat ash-coloured, except at the end, which for above an inch is black, and then tipped with white: the two middle feathers are as long again as any of the rest. The legs are long, brown, and stouter than those of a Heron: the claws are shortish, but crooked, and of a black colour. From the back of the head spring several long dark-coloured feathers, that hang loose behind like a pendent crest, which the Bird can erect or depress at pleasure. "The Dutch (says Le Vaillant) gave it the name of Secretary, on account of the bunch of quills behind its head; for in Holland, clerks, when interrupted in their writing, stick their pen in their hair behind their right ear, and to this the tuft of the Bird was thought to bear some resemblance."*

This Bird is found in the interior parts of Africa, Asia, and the Philippine islands. The Hottentots at the Cape of Good Hope know it by a name that signifies the Serpent-eater; and it would almost seem that nature had principally destined it for the purpose of confining, within due bounds, the race of Serpents, which is very extensive in all the countries that it inhabits.

The mode in which it seizes these dangerous creatures is very peculiar. When it approaches them it is always careful to carry the point of one

* New Travels, ii. 244.—Latham, i. 20.

of its wings forwards, in order to parry off their venomous bites; sometimes it finds an opportunity of spurning and treading upon its antagonist, or else of taking it on its pinions and throwing it into the air. When by this proceeding it has at length wearied out its adversary, and rendered it almost senseless, it then kills and swallows it at leisure without danger.*

M. Le Vaillant tells us, that he was witness to an engagement between the Secretary Falcon and a Serpent. The battle was obstinate, and conducted with equal address on both sides. But the Serpent at length feeling the inferiority of his strength, employed, in his attempt to flee and regain his hole, all that cunning which is attributed to the tribe; while the bird, apparently guessing his design, stopped him on a sudden and cut off his retreat, by placing herself before him at a single leap. On whatever side the reptile endeavoured to make his escape, his enemy still appeared before him. Then uniting at once both bravery and cunning, he erected himself boldly to intimidate the bird; and hissing dreadfully, displayed his menacing throat, inflamed eyes, and a head swelled with rage and venom.

Sometimes this threatening appearance produced a momentary suspension of hostilities; but the bird soon returned to the charge, and, covering her body with one of her wings, as a buckler, struck her enemy with the bony protuberances of the

* Sparrman.

other, I saw him at last stagger and fall: the conqueror then fell upon him to dispatch him, and with one stroke of her beak laid open his skull.

At this instant M. Le Vaillant fired at and killed her. In her craw he found, on dissection, eleven pretty large lizards, three Serpents, as long as his arm, eleven small tortoises, most of which were about two inches in diameter, and a number of locusts and other insects, most of which were sufficiently whole to be worth preserving and adding to his collection. He observed too, that in addition to this mass of food, the craw contained a sort of ball, as large as the egg of a Goose, formed of the vertebræ of Serpents and Lizards, shells of different Tortoises, and wings, claws, and shields, of different kinds of Beetles. This indigestible mass, when it was become sufficiently large, the Secretary would, no doubt, vomit up, like other Birds of prey.*

Dr. Solandar says, he has seen one of these Birds take up a Snake, a small Tortoise, or other reptile, in its claw, and dash it with such violence against the ground, that the victim immediately died; if, however, this did not happen to be the case, he tells us that the operation was repeated till it was killed, after which it was eaten.

The Secretary is easily tamed, and when domesticated will eat any kind of food, either dressed or raw. If well fed, it not only lives on amicable terms with poultry, but, if it sees any quarrel, w

* La Vaillant's New Travels, ii. 246.

even run to part the combatants and restore order. It is true, if pinched with hunger, it will take care of itself, and fall, without scruple, on the Ducklings and Chickens. But this abuse of confidence, if it may be so termed, is but the effect of imperious want, and the pure and simple exercise of that necessity which rigorously devotes one half of what has breath to satisfy the appetite of the other.

Tame Secretaries were seen by M. Le Vaillant in several of the plantations at the Cape. He says they commonly lay two or three white eggs, nearly as large as those of a Goose. The young remain a long time in the nest, because, their legs being long and slender, they cannot easily support themselves. Even at the age of four months they may be seen to walk resting on the heel, which gives them a very awkward appearance.* But when they are seven months old, and have attained their full growth and size, they display much grace and ease in their motions, which well accord with their stately figure.†

However shrewd and cunning this Bird may be in its general conduct, yet M. de Buffon seems to have attributed to it a much greater degree of intelligence than is really its due:—"When a painter (says he, quoting a letter of the Viscount de Querhoent) was employed in drawing one of these

* Thunberg says, that they are not to be reared without great difficulty, as they are very apt to break their legs. Vol. i. p. 148.

† Le Vaillant.

Birds, it drew near him, looked attentively upon his paper, stretched out its neck, and erected the feathers of its head, as if it admired its figure. It often came with its wings raised, and its head projected, to observe what he was doing. It also thus approached me two or three times when I was sitting at a table in its hut in order to describe it." This stretching out of its head, and erection of its crest, seems, however, to have arisen from nothing more than that love which almost all domesticated Birds exhibit to have their heads scratched. And these Birds, when rendered familiar, are well known to approach every person who comes near, and to stretch out their necks by way of making known their desire.

It is not long that this singular Bird has been known, even at the Cape: but when we consider its social and familiar dispositions, we are disposed to think that it would be adviseable to multiply the species, particularly in our colonies, for it is hardy enough to endure even European climates, where it might be serviceable in destroying not only the pernicious reptiles, but Rats and Mice.

It is a very singular circumstance, that this Bird strikes forwards with its legs, and not, like all others, backwards.

The Secretary Falcons make a flat nest with twigs, not unlike that of some of the Eagles, full three feet in diameter, and line it with wool and feathers. This is usually formed in some high tuft of trees, and is often so well concealed as not easily to be found.

THE BEARDED EAGLE.*

The Bearded Eagles, of which so many fabulous tales have been related, are inhabitants of the highest parts of the great chain of the Alps, that separates Switzerland from Italy. They are frequently seen of immense size: one that was caught in the Canton of Glarus measured, from the tip of the beak to the extremity of its tail, near seven feet, and eight feet and a half from tip to tip of its wings; but some have been shot that were much larger. The beak is of a purplish flesh colour, and hooked only at the point; and the head and neck are covered with feathers. Beneath the throat hangs a kind of beard, composed of very narrow feathers, like hairs; the legs are covered with feathers quite to the toes, which are yellow: the claws are black. The body isof a blackish brown above, and the under parts are white, with a tinge of brown.

They make their nests in the clefts of rocks, inaccessible to man, and usually produce three or four young ones at a time. They live on animals which inhabit the Alps, such as the Chamois, White Hares, Marmots, Kids, and particularly Lambs, from which circumstance they are called *Lammer geyer*, or Lamb-vultures.† These Birds

* SYNONYMS.—Falco Barbatus. *Linn. Gmel.*—Vultur Barbatus. *Linn.* —Lammer-geyer. *Var.*—Vulturine Eagle. *Albin* —Bearded Bastard-eagle *Lew.*

† It is, however, to be remarked, that the Swiss peasants do not altogether confine the appellation of Lammer geyer to this species, but that they sometimes extend it to other large Birds of prey.

seldom appear but in small parties, usually consisting of the two old Birds and their young.

If common report may be credited, this rapacious Bird does not confine its assaults to the brute creation, but it sometimes attacks and succeeds in carrying off young children.

Gesner, on the authority of Fabricius, says, respecting this Bird, that some peasants between Miesen and Brisa, cities in Germany, losing every day some of their cattle, which they sought for in the forests in vain, observed by chance a very large nest resting on three oaks, constructed with sticks and branches of trees, and as wide as would cover a cart. They found in this nest three young Birds, already so large, that their wings extended seven ells; their legs were as thick as those of a Lion, the nails of the size of a man's fingers; and in the nest were several skins of Calves and Sheep.*

It appears to have been one of the two varieties of this Bird that are sometimes seen in Persia and other eastern countries, rather than the Condur, as is generally supposed, from which the fabulous stories of the *Roc* of the Arabian Tales originated, since the latter is confined to the wild districts of South America, and has never been fully ascertained to have visited the old continent.

One of these varieties it is that Mr. Bruce describes as having seen on the highest part of the mountain of Lamalmon, not far from Gondar, the capital of Abyssinia. He says, that on account of the tuft growing beneath its beak the inhabitants

* Buffon.

call it Abou Duch'n, or Father Long-beard. Mr. Bruce supposed it not only one of the greatest of the Eagle kind, but certainly one of the largest Birds that flies. From wing to wing he measured eight feet four inches, and from the tip of his tail to the point of his beak, when dead, four feet seven inches. He weighed twenty-two pounds, and was very full of flesh. His legs were very short, but his thighs extremely muscular. His eyes were remarkably small, the aperture being scarcely half an inch. The crown of the head was bald, as was also the front where the bill and skull joined.

"This noble Bird (says our author) was not an object of any chace or pursuit, nor stood in need of any stratagem to bring him within our reach. Upon the highest top of the mountain Lamalmon, while my servants were refreshing themselves from that toilsome rugged ascent, and enjoying the pleasure of a most delightful climate, eating their dinner in the outer air, with several large dishes of boiled Goat's flesh before them, this enemy, as he turned out to be to them, suddenly appeared; he did not stoop rapidly from a height, but came flying slowly along the ground, and sat down close to the meat, within the ring the men had made round it. A great shout, or rather cry of distress, called me to the place. I saw the Eagle stand for a minute, as if to recollect himself, while the servants ran for their lances and shields. I walked up as nearly to him as I had time to do. His attention was fully fixed upon the flesh. I saw him put his foot into the pan, where there was a large piece in water prepared for boiling, but finding the

smart, which he had not expected, he withdrew it, and forsook the piece that he held.

"There were two large pieces, a leg and a shoulder, lying upon a wooden platter, into these he thrust both his claws, and carried them off, but I thought he looked wistfully at the large piece which remained in the warm water. Away he went slowly along the ground as he had come. The face of the Cliff over which criminals are thrown took him from our sight. The Mahometans that drove the Asses were much alarmed, and assured me of his return. My servants on the other hand very unwillingly expected him, and thought he had already more than his share.

"As I had myself a desire of more intimate acquaintance with him, I loaded a rifle-gun with ball, and sat down close to the platter by the meat. It was not many minutes before he came, and a prodigious shout was raised by my attendants, "He is coming, he is coming," enough to have discouraged a less courageous animal. Whether he was not quite so hungry as at his first visit, or suspected something from my appearance, I know not, but he made a small turn and sat down about ten yards from me, the pan with the meat being between me and him. As the field was clear before me, and I did not know but his next move might bring him opposite to some of my people, so that he might actually get the rest of the meat, and make off, I shot him with the ball through the middle of his body, about two inches below the wing, so that he lay down upon the grass without a single flutter.

"Upon laying hold of his monstrous carcase, I was not a little surprized at seeing my hands covered and tinged with yellow powder or dust. On turning him upon his belly, and examining the feathers of his back, they produced a dust, the colour of the feathers there. This dust was not in small quantities, for, upon striking the breast, the yellow powder flew, in full greater quantity than from a hair-dresser's powder-puff. The feathers of the belly and breast, which were of a gold colour, did not appear to have any thing extraordinary in their formation, but the large feathers in the shoulder and wings seemed apparently to be fine tubes, which, upon pressure, scattered this dust upon the finer part of the feather, but this was brown, the colour of the feathers of the back. Upon the side of the wing, the ribs, or hard part of the feathers, seemed to be bare, as if worn, or, I rather think, were renewing themselves, having before failed in their functions.

"What is the reason of this extraordinary provision of nature is not in my power to determine. As it is an unusual one, it is probably meant for a defence against the climate, in favour of the Birds which live in those almost inaccessible heights of a country, doomed, even in its lower parts, to seveveral months excessive rain."

Mr. Bruce the same day shot a Heron, which differed in nothing from ours, except that it was smaller, and had upon his breast and back a blue powder, in full as great quantity as that of the other Bird.*

* Appendix to Bruce's Travels.

THE GOLDEN EAGLE.*

The Golden Eagle is a native of Europe, and even of some of the more mountainous parts of Great Britain. It is a large species, weighing twelve or fourteen pounds; measuring in length three feet, and from tip to tip of his wings seven feet and a half. The bill is deep blue, and the cere yellow. The head and neck are of a dark brown, bordered with tawny: the hind-part of the head is of a bright rust-colour, and the rest of the body brown. The tail is blotched with ash-colour. The legs are yellow, and feathered to the toes, which are scaly: the claws are remarkably large, the middle one being two inches in length.†

This Eagle has been generally considered by mankind as bearing the same dominion over the Birds, which they have, almost unanimously, attributed to the Lion over the Quadrupeds. The Comte de Buffon, taking up the idea, is of opinion that they have many points of resemblance, both physical and moral. "Magnanimity (he says) is equally conspicuous in both: they despise the small animals, and disregard their insults. It is only after a series of provocations, after being teazed with the noisy or harsh notes of the Raven or Magpie, that the Eagle is determined to punish their temerity or their insolence with death. Besides, both disdain the pos-

* Synonyms.—Falco Chrysaëtos. *Linn.*—Grand Aigle. *Buff.*—Orn, in Norway.—Golden Eagle. *Var.*—*Bew. Birds, p.* 5.—*Penn. Brit. Zool. vol.* i. *tab.* 16.

† Latham, i. p. 31.

session of that property which is not the fruit of their own industry; and they reject with contempt the prey which is not procured by their own exertions. Both are remarkable for their temperance. This species seldom devours the whole of his game, but, like the Lion, leaves the fragments and offals to the other animals. Though famished for want of prey, he disdains to feed upon carrion.

"Like the Lion also he is solitary, the inhabitant of a desert, over which he reigns supreme, and excludes all the other Birds from his silent domain. It is more uncommon, perhaps, to see two pairs of Eagles in the same tract of mountain, than two families of Lions in the same part of the forest. They separate from each other at such wide intervals, as to afford ample range for subsistence, and esteem the value and extent of their dominion to consist in the abundance of the prey with which it is replenished.

"The eyes of the Eagle have the glare of those of the Lion, and are nearly of the same colour; the claws are of the same shape; the organs of sound are equally powerful, and the cry equally terrible.—Destined, both of them for war and plunder, they are equally fierce, equally bold and untractable. It is impossible to tame them, unless they be caught when in their infancy. It requires much patience and art to train a young Eagle to the chace; and after he has attained to age and strength, his caprices and momentary impulses of passion are sufficient to create suspicions and fears in his master. Authors inform us that the Eagle was anciently used in the East for falconry; but this practice is now

laid aside. He is too heavy to be carried on the hand without great fatigue; nor is he ever brought to be so tame or so gentle as to remove all suspicions of danger. His bill and claws are crooked and formidable: his figure corresponds with his instinct: his body is robust; his legs and wings strong; his flesh hard; his bones firm; his feathers stiff; his attitude bold and erect; his movements quick; his flight rapid. He rises higher in the air than any of the winged race, and hence he was termed by the ancients the *Celestial Bird*, and regarded in their auguries as the messenger of Jupiter. He can distinguish objects at an immense distance, but his smell is inferior to that of the Vulture. By means of his exquisite sight he pursues his prey, and, when he has seized it, he checks his flight, and places it upon the ground, to examine its weight before he carries it off. Though his wings are vigorous, yet his legs, being stiff, it is with difficulty he can rise, especially if he is loaded. He is able to bear away Geese and Cranes: he also carries off Hares, young Lambs, and Kids. When he attacks Fawns or Calves, he instantly gluts himself with their blood and flesh, and afterwards transports their mangled carcases to his nest or *aery*."*

Formed for war, these Birds are solitary and unsociable: they are also fierce, but not implacable; and though not easily tamed, are certainly capable of great docility, and in some cases, especially when gently treated, of inviolable attachment. This, however,

* Buffon's Birds.

happens but rarely, as the keeper, of the two brutes, is often the more savage and unrelenting. His inhuman harshness the bird sometimes suddenly and severely revenges.

A gentleman who lived in the South of Scotland had, not many years ago, a tame Eagle, which the keeper injudiciously one day thought proper, for some petty fault, to lash with a horsewhip. About a week afterwards the man chanced to stoop within reach of the chain, when the enraged animal, recollecting the late insult, flew full in his face with so much fury and violence, that he was terribly wounded, but luckily driven so far back by the blow, as to be out of all further danger. The screams of the Eagle alarmed the family, who found the poor fellow sprawling at some distance in a very bloody plight, equally stunned with the fright and the fall. The animal was still pacing and screaming in a manner not less threatening than majestic. It was even dreaded, whether, in so violent a rage, he might not break loose; which, fortunately perhaps for them he did, just as they withdrew, and escaped for ever.

This species build their nests in elevated rocks, ruinous and solitary castles and towers, and other sequestered places. The nest is quite flat, and not hollow, like those of other Birds. The male and female commonly place it between two rocks in a dry and inaccessible situation. The same nest, it is said, serves the Eagle during life. Its form resembles that of a floor. Its basis consists of sticks about five or six feet in length, which are supported

at each end, and these are covered with several layers of rushes and heath. An Eagle's nest was found in the Peak of Derbyshire, which Willughby describes in the following manner: "It was made of great sticks, resting one end on the edge of a rock, the other on a birch tree. Upon these was a layer of rushes, and over them a layer of heath, and on the heath rushes again; upon which lay one young, and an addle egg; and by them a Lamb, a Hare, and three Heath Pouts. The nest was about two yards square, and had no hollow in it."*

The females never lay above two or three eggs, which they hatch in thirty days. They feed their young with the slain carcases of such small animals as come in their way, as Hares, Lambs, or Geese; and, though they are at all times formidable, they are particularly so while bringing up their young.

It is said a countryman once got a comfortable subsistence for his family out of an Eagle's nest, during a summer of famine. He protracted the assiduity of the old Birds beyond their usual time, by clipping the wings, and retarding the flight of the young; and tying them so as to increase their cries, which is always found to increase the dispatch of the parents in supplying their wants. It was lucky for him that the old ones did not detect their plunderer, otherwise their resentment might have been fatal.†—For a peasant not many years ago resolved to rob an Eagle's nest, which he knew to be built in a small island in the beautiful lake of

* Willughby, p. 21. † Penn. Brit. Zool. i. 163.

Killarney. He stripped himself for this purpose, and swam over when the old birds were gone, but, in his return, while yet up to the chin in water, the parents coming home, and missing their offspring, quickly fell on the plunderer, killed him on the spot, and rescued their young.

> Thus the bold Bird her helpless young attends,
> From danger guards them, and from want defends;
> In search of prey she wings the spacious air,
> And with th'untasted food supplies her care.

Several instances have been recorded of children being seized and carried off by the Eagles to their young. In the year 1737, in the parish of Norderhougs, in Norway, a boy somewhat more than two years old was running from the house to his parents, who were at work in the fields at no great distance, when an Eagle pounced upon, struck her talons into, and flew off with him in their sight.—It was with grief and anguish that they beheld their child dragged away, but all their screams and efforts to prevent it were it were in vain.*

Anderson, in his History of Iceland, says, that in that island children of four or five years of age have been sometimes taken away by the Eagles; and Ray, that in one of the Orknies a child of a year old was seized in the talons of an Eagle, and carried above four miles to her nest; the mother, knowing the place, pursued the Eagle, found her child in the nest, and took it away unhurt.†

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* Pontoppidan, part ii. p. 89.

† Ray Prodrom. Hist. Nat. Scot.

The form of these Birds is extremely fibrous and muscular, but their chief strength lies in their beak, their talons, and their wings. There is scarcely any quadruped a match for them, as they are capable of giving the most terrible annoyance, without much danger to themselves. One flap of their wing has been known to lay a man dead in an instant.

They are remarkable for their longevity, and their power of sustaining abstinence from food for a great length of time. One that died at Vienna had been in confinement above a hundred years: and one that was in the possession of a gentleman of Conway, in Caernarvonshire, from the neglect of his servants, was kept for three weeks without any sustenance whatever.*

THE BLACK EAGLE.†

This Bird is a native of Europe. Its length is two feet ten inches; the bill is horn-coloured, and the cere reddish. The general colour of the plumage is blackish; the head and upper part of the neck mixed with yellow. The lower half of the tail is white, with blackish spots; the other half blackish. The legs are covered with dirty white feathers: the toes are yellow, and the claws black.‡

An Eagle of this species, kept by the Abbé Spallanzani, without any difficulty killed Dogs much

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* Penn. Brit. Zool. i. 164.

† SYNONYMS.—Falco melanaëtos. *Linn.*—Aigle commune. *Buff.*—Common Eagle. *Kerr.*

‡ Latham, i. 28.

larger than itself. "When I forced one of these animals (says this writer) into the apartment where I kept the Eagle, it immediately ruffled the feathers on its head and neck, cast a dreadful look at the Dog, and, taking a short flight, immediately alighted on his back. It held the neck firm with one foot, by which the Dog was prevented from turning his head to bite, and with the other grasped one of his flanks, at the same time driving its talons into the body; and in this attitude it continued till the Dog expired with fruitless outcries and efforts.—The beak, which had been hitherto unemployed, was now used for making a small hole in the skin, which was gradually enlarged; from this the Bird began to tear away and devour the flesh, and went on till he was satisfied. He never ate any skin, intestine, or bone, except very small ones, such as the ribs of Cats and small Dogs.

"Notwithstanding its ferociousness, and violent impetuosity in attacking animals, it never gave any molestation to man. I, who was its feeder, could safely enter the apartment where the Bird was kept, and behold these assaults without dread or apprehension; nor was the Eagle at all prevented from attacking the living prey I offered it, or rendered shy by my presence.

"In general when it had flesh at will, it made only one meal a day. I found, by weighing what it ate, that thirty ounces of flesh, one day with another, were perfectly sufficient for it."*

* Spallanzani's Dissertations.

THE OSPREY.*

This Bird frequents large rivers, lakes, and the sea-shores both of Europe and America. It is about two feet long, and somewhat more than five feet broad; and its wings, when closed, reach beyond the end of the tail. The head is small, and on the top is black or brown, variegated with white. The upper parts of the body, and the whole of the tail, are brown, and the belly is white. It is singular in this bird, that the outer toe turns easily backward, so as on occasion to have the toes two forward and two backward, and has a much larger claw than the inner one. This, and the peculiar roughness of the whole foot underneath, are well adapted to secure the fish, their slippery prey.

This bird frequently affords much amusement to strangers on the larger rivers of America. During the spring and summer months the Osprey is often seen hovering over the rivers, or resting on the wing for several minutes at a time without the least visible change of place. It then suddenly darts down and plunges into the water, from whence it seldom rises again without some fish in its talons.—When it rises into the air it immediately shakes off the water, which it throws around like a mist, and pursues its way towards the woods. The Bald Eagle,† which is on these occasions generally upon

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* Synonyms.—Falco Haliaëtos. *Linn.*—Bald Buzzard, or Sea Eagle. *Ray.*—Fishing Hawk. *Catesby.*—Fishing Eagle. *Montagu.*—Balbuzzard. *Buff.*—Osprey. *Latham. Penn.*——*Bew. Birds, p.* 13.

† Falco Leucocephalus of Linnæus.

the watch, instantly pursues, and if it can overtake, endeavours to soar above it. The Osprey, solicitous for its own safety, drops the Fish in alarm; the Eagle immediately pounces at this prey, and never fails to catch it before it reaches the water, leaving the Hawk to begin his work afresh.

It is somewhat remarkable, that whenever the Osprey catches a Fish it always makes a loud screaming noise, which the Eagle, if within hearing, never fails to obey. Sometimes it happens that, if the Osprey is pretty large and strong, it will contend with the Eagle for its rightful property; and, though generally conquered in the end, a contest has been sustained for upwards of half an hour.*

The Osprey generally builds its nest on the ground, among reeds, and lays three or four white eggs, rather smaller than those of a Hen. Mr. Montague, says that he once saw the nest of this Bird on the top of a chimney of a ruin in an island of Loch Lomond in Scotland: it was large and flat, formed of sticks laid across, lined with flags, and rested on the sides of the chimney.†

THE PONDICHERRY EAGLE.‡

This Bird, both in its general form and in its manners, bears a considerable resemblance to the Kites. Its

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* Catesby, i. 2.—Burnaby's Travels in North America, p. 28.—Erickell, p. 172.

† Montagu, Art. Osprey.

‡ SYNONYMS.—Falco Pondicerianus. *Linn.*— Aigle de Pondicherry. *Buff.*—Aigle de Malabare. *D'Obs.*—Pondicherry Eagle. *Lath.*

length is about nineteen inches. The bill is ash-coloured, with the cere bluish, and the tip yellow. The body is of a chesnut-colour; and the head, neck, and breast are white. All the feathers have a longitudinal brown streak down the middle; and the six first quill feathers of the wings are black from the middle to the tips. The legs are yellow, and the claws black.

These Eagles, which are found principally on the coast of Malabar, are frequently seen hovering, in company with Kites and other Birds of prey, over towns and villages in search of food. Though not courageous, they are sometimes excessively impudent. Their attacks are generally directed against the smaller animals, and they will feed with avidity on putrid garbage or carrion: they have even been seen employed on the leaves of the banyan trees, where the Indians, after eating, have left a little rice glued.

The Gentoos have great veneration for this Bird: some of them even bear a figure of it impressed with a hot iron on their breast. It has also obtained considerable reputation for augury: if any of the Dasseris observe its flight directed towards the quarter where he is about to transact business he never doubts of success; but, indeed, whatever may be the event, these men are not to be persuaded that their sacred friend could be in error.* The Brahmins, at some of the temples, accustom the Birds of this species to come at stated times to

* D'Obsonville, 43.

receive food; and their mode of calling them to their meals is by striking a brass plate.*

THE COMMON BUZZARD.†

The Buzzard is about twenty inches in length, and in breadth four feet and a half. Its bill is lead-coloured. The upper parts of the body are dusky-brown, and the lower pale, varied with brown. The wings and tail are marked with bars of a darker hue. The tail is greyish beneath, and tipped with a dusky white. The legs are yellowish, and the claws black.

This well-known bird is of a sedentary and indolent disposition: it continues perched for many hours upon a tree or eminence, from whence it darts upon such prey as comes within its reach. It feeds on birds, small quadrupeds, reptiles, and insects. Though possessed both of strength, agility, and weapons to defend itself, it is cowardly, inactive, and slothful: it will fly before a Sparrow-hawk, and, when overtaken, will suffer itself to be beaten, and even brought to the ground without resistance.‡

The ensuing anecdote will shew that the Buzzard may be so far tamed as even to be rendered a faithful domestic We shall recite it verbatim from

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* Sketches of the Hindoos.

† SYNONYMS.—Falco Buteo. *Linn.*—Buse. *Buff.*—Buzzard. *Penn.*—Common Buzzard. *Lath.*—*Bew. Birds*, p. 15.——*Penn. Brit. Zool. vol. i. tab.* 25.

‡ Latham, i. 48.

the letter of the relater, M. Fontaine, inserted in the work of the Comte de Buffon. "In 1763 (says this gentleman) a Buzzard was brought to me, that had been taken in a snare: it was at first extremely savage and even cruel. I undertook to tame it, and I succeeded, by leaving it to fast, and constraining it to come and eat out of my hand. By pursuing this plan I brought it to be very familiar: and, after having shut it up about six weeks, I began to allow it a little liberty, taking the precaution, however, to tie both pinions of its wings. In this condition it walked out into my garden, and returned when I called it to feed. After some time, when I judged that I could trust to its fidelity, I removed the ligatures, and fastened a small bell, an inch and a half in diameter, above its talon, and also attached on the breast a bit of copper having my name engraved on it. I then gave it entire liberty, which it soon abused; for it took wing, and flew as far as the forest of Belesme. I gave it up for lost; but four hours after I saw it rush into my hall, which was open, pursued by five other Buzzards, who had constrained it to seek again its asylum.

"After this adventure it ever preserved its fidelity to me, coming every night to sleep on my window; it grew so familiar as to seem to take singular pleasure in my company. It attended constantly at dinner, sat on a corner of the table, and very often caressed me with its head and bill, emitting a weak sharp cry, which, however, it sometimes softened. It is true that I alone had this privilege. It one day

followed me when I was on horseback, more than two leagues, sailing above my head.

" It had an aversion both to Dogs and Cats, nor was it in the least afraid of them; it had often tough battles with them, but always came off victorious. I had four very strong Cats, which I collected into my garden to my Buzzard; I threw to them a bit of raw flesh; the nimblest Cat seized it, the rest pursued; but the Bird darted upon her body, bit her ears with his bill, and squeezed her sides with his talons with such force that the Cat was obliged to relinquish her prize. Often another Cat snatched it the instant it dropped, but she suffered the same treatment, till the Buzzard got entire posssession of the plunder. He was so dextrous in his defence, that when he perceived himself assailed at once by the four Cats he took wing, and uttered a cry of exultation. At last, the Cats, chagrined with their repeated disappointment, would no longer contend.

" This Buzzard had a singular antipathy: he would not suffer a red cap on the head of any of the peasants, and so alert was he in whipping it off, that they found their heads bare without knowing what was become of their caps. He also snatched wigs without doing any injury, and he carried these caps and wigs to the tallest tree in a neighbouring park, which was the ordinary deposit of his booty.

" He would suffer no other Bird of prey to enter his domain; he attacked them very boldly and put them to flight. He did no mischief in my court-yard; and the poultry, which at first dreaded him,

grew insensibly reconciled to him. The Chickens and Ducklings received not the least harsh usage, and yet he bathed among the latter. But, what is singular, he was not gentle to my neighbours' poultry: and I was often obliged to publish that I would pay for the damages that he might occasion. However, he was often fired at, and he, at different times, received fifteen musket-shots without suffering any fracture. But once early in the morning hovering over the skirts of a forest, he dared to attack a Fox; and the keeper, seeing him on the shoulders of the Fox, fired two shots at him; the Fox was killed, and the Buzzard had his wing broken; yet, notwithstanding this fracture, he escaped from the keeper, and was lost seven days.

"This man, having discovered, from the noise of the bell, that he was my Bird, came next morning to inform me. I sent to make search near the spot, but the Bird could not be found, nor did it return till seven days after. I had been used to call him every evening with a whistle, which he did not answer for six days; but, on the seventh, I heard a feeble cry at a distance, which I judged to be that of my Buzzard: I repeated the whistle a second time, and heard the same cry. I went to the place from whence the sound came, and, at last found my poor Buzzard with his wing broken, who had travelled more than half a league on foot to regain his asylum, from which he was then distant about a hundred and twenty paces. Though he was extremely reduced he gave me many ca-

resses. It was six weeks before he was recruited, and his wounds were healed; after which he began to fly as before, and follow his old habits for about a year: he then disappeared for ever. I am convinced that he was killed by accident; and that he would not have forsaken me from choice."*

The Buzzard is one of the most common of the Hawk kind that we have in this country. It breeds in large woods, and usually builds in an old Crow's nest, which it enlarges and lines in the inside with wool and other soft materials. It feeds and tends its young, which are generally two or three in number, with great assiduity. Ray affirms that if the female be killed during the time of incubation, the male Buzzard will take the charge of them, and patiently rear the young till they are able to provide for themselves.

THE GENTIL FALCON.†

The Gentil Falcon is about two feet in length. Its beak is of a red colour, with a yellow cere. The head and back part of the neck are rusty, with oblong black spots. The back and wings are brown, and each feather of the wings is tipped with rust-colour. The quills are dusky; the outer webs barred with black, and the lower parts of the inner ones marked with white. The wings reach to the middle

* Letter of M. Fontaine, Curé de Saint Pierre de Belesme, to the Comte de Buffon.

† SYNONYMS.—Falco Gentilis. *Linn.*—Gentil Falcon. *Lath, Penn.* ——*Penn. Brit. Zool. vol. i. tab.* 21. 22.

of the tail, which is banded with black and ash-colour, and tipped with white. The legs are short and yellow, and the claws black.*

There is in Syria a small variety of this Bird, called by the inhabitants Shaheen, and it is of so fierce a disposition as undauntedly to attack any bird that presents itself. "Were there not several gentlemen now in England to bear witness to the following fact, (says Dr. Russel) I should hardly venture to assert that with this Bird, which is about the size of a Pigeon, the inhabitants sometimes take large Eagles. The Hawk in former times was taught to seize the Eagle under the pinion, and thus depriving him of the use of one wing, both Birds fell to the ground together; but I am informed the present mode is to teach the Hawk to fix on the back, between the wings, which has the same effect, only that the Bird tumbling down more slowly, the falconer has more time to come into his Hawk's assistance; but in either case, if he be not very expeditious, the Falcon is inevitably destroyed.

"I never saw the Shaheen fly at Eagles, that sport being disused in my time; but I have often seen him take Herons and Storks. The Hawk, when thrown off, flies for some time in a horizontal line, not six feet from the ground, then mounting perpendicularly, with astonishing swiftness, he seizes his prey under the wing, and both together come tumbling to the ground. If the falconer is not, however, very expeditious the game soon disengages itself."†

* Latham, i. 64. † Russel's Aleppo.

THE HEN HARRIER.*

The Hen Harrier is about seventeen inches long, and three feet wide. Its bill is black, and cere yellow. The upper parts of its body are of a bluish grey; and the back of the head, the breast, belly, and thighs, white, the two former marked with dusky streaks. The two middle feathers of the tail are grey, and the outer webs of the others are of the same colour, but the inner ones are marked with alternate bars of white and rust-colour. The legs are long, slender, and yellow; and the claws black.†

These Birds are often seen about forests, heaths, and other retired places, especially in the neighbourhood of marshy grounds, where they destroy vast numbers of Snipes. They sail with great regularity all over a piece of marsh, till they discover them, when they immediately pounce upon and seize them.

A gentleman who was shooting in Hampshire, by chance sprung a Pheasant in a wheat-stubble, and shot at it; when notwithstanding the report of the gun it was pursued by a Hen Harrier, but escaped into some covert. He then sprung a second, and a third, in the same field, that got away in the same manner; the Hawk hovering round him all the while he was beating the field, conscious, no doubt,

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* Synonyms.—Falco Cyaneus. *Linn.*—Oiseau S. Martin. *Buff.*—Blue Hawk. *Edwards.*—Hen Harrier. *Var.*———*Bew. Birds.*—*p.* 33.—*Penn. Brit. Zool. vol.* i. *tab.* 28.

† Latham, i. 88.

of the game that lurked in the stubble. Hence we may conclude, that this Bird of prey was rendered very daring and bold by hunger, and that Hawks cannot always seize their game when they please. We may further observe, that they cannot pounce their quarry on the ground, where it might be able to make a stout resistance, since so large a fowl as a pheasant could not but be visible to the piercing eye of a Hawk, when hovering over it. Hence that propensity of cowring and squatting in game till they are almost trod on, which, no doubt, was intended as a mode of security, though it has long been rendered destructive by the invention of nets and guns.*

One of these Hawks that was shot some years ago near London, was, when first seen, dodging round the lower parts of some old trees, and it now and then seemed to strike against the trunks of them with its beak or talons, still, however, continuing on the wing. The cause of this very singular conduct could not even be guessed till after it was killed, when, on opening its stomach, near twenty small brown Lizards† were found there, which it had artfully seized, by coming suddenly round upon them. They were each of them bitten or torn into two or three pieces.‡

These destructive Birds may be taken in a trap baited with a stuffed Rabbet's skin, and covered nicely over with moss.—They breed annually on the Cheviot-hills; and from a Hen Harrier and

* White's Naturalist's Calendar, p. 70.

† Lacerta Agils of Linnæus. ‡ Edwards's Gleanings, i. 33.

Ring Tail* having been shot on the same nest, it appears that these are not distinct species, however different they may be in appearance, but merely the male and female of the same.† Their nests are formed on the ground, and the number of young is usually about four.

THE SPARROW HAWK.‡

The male of this species is about twelve, and the female fifteen, inches in length. The exterior feathers of the upper parts of the latter are brown, with dusky edges; and on the back of the head are some whitish spots: the under parts are yellowish white, waved with light brown. The chin is streaked with perpendicular lines of brown. The tail is barred with dark brown, and at the end is white. The legs are yellow, and the claws black. The male is somewhat different. The upper part of his breast is of a dark lead-colour, the bars on this part are more numerous, and the under parts are altogether darker. In both sexes the bill is blue, and the cere yellow.

The Sparrow-hawk is a bold Bird, and is the dread of the tenants of the farm-yard, making at times great havoc among the young poultry of all kinds; and it will commit its depredations in the most daring manner, even before a person's face.

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* Falco Pygargus of Linnæus. † Linn. Tran. iv. 13.

‡ SYNONYMS.—Falco Nisus. *Linn.*—Epervier. *Buff.*—Sparrow Hawk. *Var.*——*Bew. Birds, p.* 27.

It is a very obedient and docile Bird, and when properly trained, capable of great attachment. "I very well remember one that I had when a boy (says the compiler of Beauties of Natural History) that used to accompany me through the fields, catch his game, devour it at his leisure, and after all, find me out wherever I went: nor after the first or second adventure of this kind was I ever afraid of losing him. A peasant, however, to my great mortification, one day shot him for having made too free with some of his poultry. He was about as large as a Wood-pigeon, and I have seen him fly at a Turkey-cock, and when beaten, return to the charge with undaunted intrepidity; I have also known him kill a Fowl five or six times as big as himself."

The female builds her nest in hollow trees, high rocks, or lofty ruins; sometimes she is contented with the old nest of a Crow: she generally lays four or five eggs. This Bird may be trained to hunt Partridges and Quails.

THE CHAUNTING FALCON.*

This lately discovered species is about the size of the Common Falcon. The plumage is in general of a pale lead or dove-colour, with the top of the head and the scapulars inclining to brown. The under parts of the breast are of a pearly grey, crossed with numerous grey markings. The quills

* Le Faucon Chanteur, *Le Vaillant.*

are black. The tail is wedge-shaped, the outer feathers one third shorter than the middle ones, and the tip white. The bill and claws are black, and the cere and legs orange. It is a native of Caffraria and some of the neighbouring countries.

In the breeding-time the male is remarkable for its song, which it utters every morning and evening, and like the Nightingale, not uncommonly all the night through. It sings out in a loud tone for more than a minute, and after an interval begins anew. During its song it is so regardless of its own safety, that any one may approach very nearly to it: but at other times it is so suspicious as to take flight on the slightest alarm. Should the male be killed, the female may also be shot without difficulty; for in attachment to him, she continues flying round with the most plaintive voice; and often passing within a few yards of the gunner, it is an easy matter to kill her. But if the female happens to be shot first, her mate does not testify so warm an attachment, for, retiring to the top of some distant tree, he is not easily approached: he does not however cease to sing, but becomes so wary as to fly entirely away from that neighbourhood on the least alarm.

The female forms her nest between the forks of trees, or in bushy groves. She lays four white round eggs.

This is, for its size, a very destructive species, and preys on Partridges, Hares, Quails, Moles, Rats, and other small animals.*

* Le Vaillant Ois. d' Afrique, i. p. 117.

THE OWL TRIBE.

IN this tribe, as in the last, the bill is hooked, but it is not furnished with a cere. The nostrils are oblong, and covered with bristly feathers. The head, ears, and eyes, are very large. The tongue is cleft.

These Birds seem to differ from the Falcons much in the same manner as Moths differ from Butterflies, the Owls being nocturnal, and feeding only in the night, and the Falcons flying altogether in the day-time. They feed principally on small birds and quadrupeds, and on nocturnal insects, the exuviæ and bones of which, as in the others, are always discharged at the mouth, in the form of small pellets. And their eyes are so constructed that they are able to see much more distinctly in the dusk of the evening than in the broad glare of sunshine. Most animals possess, in some degree, by the contraction and dilatation of the pupil of the eye, the power of shutting out or admitting light, as their necessities require; but in the Owl this property is seen in singular perfection: and in addition to this there is an irradiation on the back of the eye, and even the iris itself has a faculty of reflecting the rays of light, so as to assist vision in the gloomy places that these Birds usually frequent.

Incapable of seeing their prey, and of avoiding danger sufficiently in the full blaze of day, they

keep, during this time, concealed in some secure retreat, suited to their gloomy habits, and there continue in solitude and silence. Should they venture abroad, every thing dazzles and distracts them. Legions of Birds flock around them, and single them out as objects of derision and contempt. The Blackbird, the Thrush, the Jay, the Bunting, and the Red-breast, all come in a crowd, and employ their little arts of insult and abuse. The smallest, the feeblest, and the most contemptible of this bewildered creature's enemies, are then the foremost to injure and torment him. They increase their cries and turbulence around him, flap him with their wings, and, like all cowards, are ready to shew their courage to be great when they are sensible their danger is but small. The unfortunate wanderer, not knowing where he is, whom to attack, or whither to fly, patiently sits, and suffers all their indignities with the utmost stupidity. It is enough, if he but appear by day, to set the whole grove in an uproar. Either the aversion that all the smaller Birds bear to the Owl, or a temporary assurance of their own security, urges them to pursue him, whilst they encourage each other by their mutual cries to lend assistance in the general cause.—Bird-catchers, aware of this singular propensity, having first limed several of the outer branches of a hedge, hide themselves near it, and imitate the cry of the Owl so naturally, that instantly all the little creatures flock to the place in hopes of their accustomed game; but, instead of a stupid and dazzled antagonist, they find themselves ensnared by the

pitiful trick of some insidious and lurking miscreant.

This want of sight, which, however, is not common to every one of the species, is compensated by their peculiar quickness of hearing; for the latter sense is much more acute in the Owls than in most other Birds.

The head is round, and formed somewhat like that of a Cat. About the eyes the feathers are ranged, as proceeding from a common centre in the middle of the eye, and extending to some distance. The legs are clad with down or feathers, event o the origin of the claws, which are very sharp and hooked. Three of the toes stand forward, and one backward; but the fore-toe can occasionally betur ned back, to suit, as occasion may require, either for perching or climbing.

In winter they retire into holes in towers and old walls, and pass that season in sleep. The number of species is about *fifty*, of which twenty are provided with long feathers, surrounding the openings of the ears, called, from the appearance they give to the animals, horns.—In their general modes of life, the Owls may be looked upon as the Cats of the feathered species.

THE GREAT HORNED OWL.*

This large species, which is equal in size to some of the Eagles, inhabits inaccessible rocks and

* SYNONYMS.—Strix Bubo. *Linn.*—Grand Duc. *Buff.*—Great Owl, or Eagle Owl. *Willughby.*—Great Eared Owl. *Lath.*—*Penn. Brit. Zool. vol.* 1. *tab.* 29.

desert places of Europe, Asia, and America; and is sometimes, though but rarely, seen in this country. The body is of a tawny red colour, marked with lines and spots, elegantly varied, of black, brown, ash, and rust colour. The wings are long, and the tail is short, and marked with transverse dusky streaks. The legs are thick, of a brickdust red, and, except in one variety, feathered to the claws, which are large, hooked, and dusky.

Although the Owls are in general regarded by the people of most countries as Birds of ill omen, and superstitiously considered as the messengers of woe; yet the Athenians alone, among the ancients, seem to have been free from this popular prejudice, and to have regarded them rather with veneration than abhorrence. The present species, which is very common in many parts of Greece, was even considered as a favourite Bird of Minerva; and at Athens the inhabitants had a proverb, *Noctuas Athenas mittere*,* exactly equivalent to the one used by us, "to send coals to Newcastle."

This Owl sees better in the day than any other of the tribe, and it has been frequently observed preying on its game of Birds and the smaller quadrupeds in full day-light.

M. Cronstedt has recorded a very singular instance of the attachment of these Birds to their young. This gentleman resided several years, on a farm in Sudermania, near a steep mountain, on the summit of which two Eagle Owls had their

* To send Owls to Athens.

nest. One day, in the month of July, one of the young, having quitted the nest, was seized by some of his servants. This Bird, after it was caught, was shut up in a large hen-coop, and the next morning M. Cronstedt found a young Partridge lying dead before the door of the coop. He immediately concluded that this provision had been brought thither by the old Owls, which he supposed had been making search in the night-time for their lost young one, and had been led to the place of its confinement by its cry. This proved to have been exactly the case, by the same mark of attention being repeated every night for fourteen days. The game which the old ones carried to it consisted principally of young Partridges, for the most part newly killed, but sometimes a little spoiled. One time a Moor-fowl was brought so fresh, that it was still warm under the wings. A putrid Lamb was also brought, probably what had been spoiled by laying a long time in the nest of the old Owls, and they brought it merely because they had no better provision at the time.

M. Cronstedt and his servant tried to watch several nights, in order that they might observe through a window when this supply was deposited; but their plan did not succeed; and it would appear that these Owls, which are very sharp-sighted, had discovered the moment when the window was not watched, as food was found to have been deposited for the young before the coop that very night.

In the month of August this care ceased; but

that period is exactly the time when all Birds of prey abandon their young to their own exertions. From this instance it may be readily concluded, how much game must be destroyed by a pair of these Owls during the time that they rear their young. And as the eatable species of the forest repair chiefly in the evening to the fields, they are particularly exposed to the acute sight, smell, and claws of these Birds of the night.*

It is said, that sometimes, when falconers wish to lure the Kite for the purpose of training the Falcon, they disfigure the Great-horned Owl, by fastening to it the tail of a Fox. The animal, rendered thus grotesque, is let loose, and he sails slowly along, flying, as he usually does, very low. The poor Kite, either curious to observe so odd an animal, or, perhaps, inquisitive to know whether it may not be eligible prey, flies after it. He approaches near, and hovers immediately over it, when the falconer, loosing a strong-winged Falcon against him, seizes him at once, and drags him into captivity.†

THE WHITE OWL.‡

This Owl is well known by its frequenting churches, old houses, and uninhabited buildings,

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* Transactions of the Philosophical Society at Stockholm.

† Beauties of Natural History.

‡ SYNONYMS.—Strix Flammea. *Linn.*—Effraie, ou Fresaie. *Buff.*—Common Owl. *Kerr.*—White Owl, Church Owl, Barn Owl, Howlet, Madge-howlet, Gillihowter. *Willughby.*—Hissing Owl, or Screech Owl. *Montagu.*——*Bew. Birds, p.* 51.

where it continues during the day, and from whence, in the evening, it ranges abroad in quest of food. It received the name of Screech Owl from its loud and frightful cries during its flight. In its repose it makes a blowing noise, much resembling the snoring of a man.

It generally quits its hiding-place in the twilight, and takes a regular circuit round the fields, skimming along the ground in search of food, which consists chiefly of Field-mice and small Birds.—Like the rest of the tribe, it afterwards emits the bones, feathers, hair, and other indigestible parts, at the mouth, in the form of small pellets. A gentleman, on digging up a decayed pollard-ash, that had been frequented by Owls for many generations, found at the bottom many bushels of this refuse.—Sometimes these Owls, when they have eaten sufficient, will, like Dogs, hide the remainder of their meat.

Their plumage is very elegant. A circle of soft white feathers surrounds each of the eyes. All the upper parts of the body are of a fine pale yellow, variegated with white spots, and the under parts are entirely white. The legs are feathered down to the claws.*

The Mongol and Kalmuc Tartars pay almost divine honours to this Owl; for they attribute to it the preservation of Cingis Khan, the founder of their empire.—That Prince, with a small army, happened to be surprised and put to flight by his enemies, and forced to conceal himself in a little

* Penn. Brit. Zool. i. 206.

coppice; an Owl settled on the bush under which he was hidden, which induced his pursuers not to search there, as they thought it imposible any man could be concealed where that Bird would perch. From thenceforth they held it sacred, and every one wore a plume of the feathers of this species on his head. To this day, the Kalmucs continue the custom on all their great festivals; and some tribes have an idol, in form of an Owl, to which they fasten the real legs of this Bird.*

The White Owl makes no nest, but deposits its eggs, generally five or six in number, in the holes of the walls, or under the eaves of old buildings. During the time that the young are in the nest, the male and female alternately sally out in quest of food. They are seldom absent above five minutes, when they return with the prey in their claws; but as it is necessary to shift it from thence into their bill, for the purpose of feeding their young, they always alight to do that before they enter the nest. As the young continue for a great length of time in the nest, and are fed even long after they are able to fly, the old Birds have to supply them with many hundreds of Mice: on this account they are as useful in clearing the fields of Mice, as the Cat is in ridding the house of these destructive little animals.

THE BROWN OWL.†

The Brown Owl measures somewhat more than

* Penn. Arct. Zool.

† SYNONYMS.—Strix Ulula. *Linn.*—Chouette, ou Grand Chevêche. *Buff.*—Grey Owl. *Willughby.*—Great Brown Owl. *Albin.*——*Penn. Brit. Zool. vol.* 1. *tab.* 32.

a foot in length, and is spotted on the head, wings, and back, with black. Its breast is of a pale ash-colour, with dusky, jagged, longitudinal streaks; and the circle round the eyes is ash-coloured, spotted with brown.

This is one of the most rapacious of all the Owls. It resides in the woods during the day, but at the approach of evening, when many animals, as young Hares, Rabbets, Partridges, &c. come out to feed, it becomes very clamorous and active, destroying such numbers as on calculation would appear astonishing. In the dusk of the evening these animals approach the farmers' dwellings, and frequently enter the Pigeon-houses, where they sometimes commit dreadful ravages. They also kill great quantities of Mice, and skin them with as much dexterity as a cook-maid does a Rabbet. They seize their prey with great fierceness, and always, beginning at the head, tear it in pieces with great violence. Were they to appear abroad at any time but in the night, when all the poultry are gone to roost, the havoc they would commit in the farm-yard would be incalculable. They do not devour the whole of the animals that they take: the hind-parts they generally leave untouched.

On examining the nest of one of these Owls that had in it two young, several pieces of young Rabbets, Leverets, &c. were found. The Hen and one of the young were taken away; the other was left to entice the Cock, which was absent at the time the nest was discovered. On the following morning there were found in the nest no fewer

than three young Rabbets, that had been brought to this young one by the Cock during the night.

When these animals hoot, they inflate their throats to the size of a Hen's egg. They breed in hollow trees, or ruined buildings, laying commonly four whitish elliptical eggs. It is not difficult to catch them in traps; or they may easily be shot in the evenings by any person who can imitate tolerably well the squeaking of a Mouse.

THE SHRIKE TRIBE.*

IN these Birds the bill is strong, straight at the base, and hooked or bent towards the end, and the upper mandible is notched near the tip. The base is not furnished with a cere. The tongue is jagged at the end. The outer toe is connected to the middle one as far as the first joint.

This tribe is arranged by Linnæus, and some other writers, in the last order, among the Rapacious Birds. Mr. Pennant, in the later editions of his works, and Mr. Latham, have each, and, as appears to the Editor, with great propriety, begun the present order of *Pies* with it. If the Shrike is retained in the first order, on account of its principally feeding on animal food, it would be difficult to dispose properly of the Kingfisher, the Woodpecker, and some other genera which do the same. If we dwell on the curvature of the bill, how will this agree with the Parrot-kind, whose natural food is fruit? And as to their living on other Birds whenever opportunity offers, several both of the Crow tribe and others, do the like. Their habits resemble, in a great measure, those of the Pies, which Linnæus

* The order PIES seems properly to commence with the present tribe.

has himself acknowledged; and although he has arranged them under the former order, he seems to consider them as possessing a kind of middle place, between the Pies and (on account of their smallness) the Passerine order. They seem, however, to stand with more propriety at the head of the Pies, forming there a connecting link between them and the Rapacious Birds.

They are inhabitants of all quarters of the world, and are found in all climates, except within the Arctic Circle.

THE GREAT SHRIKE.*

The Great Shrike, or Butcher-bird, is a native both of Europe and America, and is in general about ten inches in length. Its bill is black, about an inch long, and hooked at the end. The upper parts of the body are of a pale ash-colour, and the wings and tail are black, marked in some parts with white. The throat, breast, and belly, are of a dirty white; and the legs are black. The female differs very little from the male.

The muscles that move the bill are very thick and strong: this apparatus seems peculiarly necessary to a species whose method of killing its prey is so singular, and whose manner of devouring it is so

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* Synonyms.—Lanius Excubitor. *Linn.*—Piegriesche Grise. *Buff.*—White Whiskey-John. *Phil. Tran.*—Mattages, Wierangle, Murdering-bird, Skreek or Shrike, Night Jar, Mountain Magpie, French-pie. *Montagu.*—Greater Butcher-bird. *Willughby.*—Great Cinereous Shrike. *Latham.*—Great Shrike. *Penn.*——*Brew, Birds, p.* 58.—*Penn. Brit. Zool.* i. *tab.* 71.

extraordinary as in this Bird. It seizes the smaller Birds by the throat, and thus strangles them; and it is probably for this reason that the Germans call it by a name signifying "The Suffocating Angel." When its prey is dead, it fixes them on some thorn, and thus spitted, tears them to pieces with its bill. Even when confined in a cage he will often treat his food much in the same manner, by sticking it against the wires, before he will devour it.*

In spring and summer it imitates the voices of other Birds, by way of decoying them within reach, that it may destroy them: beyond this its natural note is the same throughout all seasons. When kept in a cage it is observed to be mute, though it generally appears perfectly contented.†

Mr. Bell, who travelled from Moscow, through Siberia, to Pekin, says, that in Russia these Birds are often taken by the Bird-catchers, and made tame. He had one of them given to him, which he taught to perch on a sharpened stick fixed in the wall of his apartment. Whenever a small Bird was let loose in the room, the Shrike would immediately fly from his perch, and seize it by the throat in such a manner as almost in a moment to suffocate it. He then used to carry it to his perch, and spit it on the end (which was sharpened for the purpose) drawing it carefully and forcibly on with his bill and claws. He would serve several Birds in the same manner, one after another, spitting, and

* Penn. Brit. Zool. i. 213 † Latham.

letting them hang by the neck till he had leisure to devour them. This uncommon propensity seems necessary to these Birds, as an equivalent for the want of strength in their claws to tear their food to pieces. From this propensity they derive their title of Butcher-birds. They are much admired by the Russians, on account of the diversion they afford them in seizing and killing their prey.*

In America the Great Shrike has been observed to adopt an odd stratagem in order to decoy prey within its power. A gentleman there accidentally observing, that several Grasshoppers were stuck upon the sharp thorny branches of some trees, enquired of a person who lived close by, into the cause of the phenomenon, and was informed that they were stuck there by this Bird, which is called by the English in America *Nine-killer*. On further enquiry he was led to suppose, that this was an instinctive stratagem adopted by the Bird in order to decoy the smaller Birds, which feed on insects, into a situation from whence he could dart on and seize them. He is called Nine-killer from the supposition that he sticks up nine Grasshoppers in succession. That the insects are placed there as food to tempt other Birds, is said to appear from their being frequently left for a considerable length of time.†

The female forms her nest of heath and moss, lining it with wool and gossamer. She lays six eggs, which are about as big as those of a Thrush,

* Edwards's Gleanings, iii. 233.

† Paper, by Mr. Heckewelder, in Amer. Phil. Tran. iv. 124.

and of a dull olive-green, spotted at the end with black. These Birds are supposed to live to the age of five or six years; and they are much valued by the husbandmen, on the supposition that they destroy Rats, Mice, and other vermin. They are rarely found in the cultivated parts of our island, inhabiting only the mountainous wilds, among furze and unfrequented thickets.

THE TYRANT SHRIKE.*

This Bird is about the size of a Thrush. The bill is of a blackish brown colour, and furnished with bristles at the base. The upper parts of the plumage are of a lead colour, the under parts are white, and the breast inclines to ash-colour. The tail is brown, and the legs are dark brown. It is an inhabitant of Carolina.

The courage of this little creature, if we are to believe the account given to us by Catesby, is very singular. He is said to pursue and put to flight all kinds of Birds that come near his station, from the smallest to the largest, none escaping his fury; "nor did I ever see (says Catesby) any that dared to oppose him while flying, for he does not offer to attack them when sitting. I have seen one of them fix on the back of an Eagle, and persecute him so, that he has turned on his back, and into various postures in the air, in order to get rid of him; and at last was forced to alight on the top of the next

* Synonyms.—Lanius Tyrannus. *Linn.*—Gobe-mouche de la Caroline. *Buff.*—Carolina Tyrant. *Catesby.*

tree, from whence he dared not to move, till the little Tyrant was tired, or thought fit to leave him. This is the constant practice of the cock, while the hen is brooding. He sits on the top of a bush, or small tree, not far from her nest, near which if any small Birds approach, he drives them away; but the great ones, as Crows, Hawks, and Eagles, he will not suffer to come within a quarter of a mile of him without attacking them. These Birds have only a chattering note, which they utter with great vehemence all the time they are fighting. When the young are flown, they are as peaceable as other Birds."*

From authority so deservedly great as that of Catesby, we feel it unpleasant in the smallest degree to dissent, but by a letter lately received from Mr. Abbot, of Georgia, by Dr. Latham, his observations seem to have somewhat differed from these:—" A Tyrant Shrike (he says) having built its nest on the outside of a large lofty pine, I was one day considering how I could procure the eggs; when viewing the nest, I perceived a Crow alight on the branch, break and suck the eggs, and displace the nest, appearing all the while unconcerned, notwithstanding both the cock and hen continued flying at, and striking it with their bills all the while, but as soon as the Crow had completed the robbery it departed."†

The eggs were flesh-coloured, and prettily marked at the larger end with dark pink and a few black spots.

* Catesby's Carolina, i. 55. † Latham's second Supplement, p. 73.

THE PARROT TRIBE.

THIS most extensive tribe is remarkably distinct from all others. The beak is hooked all the way from the base, and the upper mandible is moveable. The nostrils are round, and placed in the base of the bill, which in some species is furnished with a cere. The tongue is broad and blunt; the head large, and the crown flat. The legs are short, with two toes placed before and two behind, for the purpose of climbing, at which these Birds are very expert.

They are principally found within the Tropics, where they live for the most part on fruit and seeds, though they will occasionally, when kept in a cage, eat both flesh and fish. They are gregarious, and excessively noisy and clamorous; yet though they associate in vast multitudes, they live chiefly in pairs of one male and a female. The place they hold among the Birds seems to be exactly that which the Apes and Monkies occupy among the quadrupeds; for like these they are very numerous, imitative, and mischievous. They breed in the hollows of trees like the Owls, seldom forming any nest, and lay two or three eggs each time, which from the vast numbers of the Birds should seem to be more than once in the season. It is said that the male and female sit alternately. In Europe they have sometimes been known to lay eggs, but they seldom sit upon them in these cool climates.

The toes of the Parrots are so flexible as to answer every purpose of hands for holding their food, or carrying it to their mouth. In climbing they always use the bill to assist the feet. They are, in general, very long lived.

In a domestic state they are extremely docile, and very imitative of sounds, most of the species being able to counterfeit even the human voice, and to articulate words with great distinctness: but their natural voice is a loud, harsh, and unpleasant scream. Alexander the Great is supposed to have been the first that introduced Parrots into Europe.

THE BRASILIAN GREEN MACAW.*

The Brasilian Macaw, which is a native of Jamaica, Guiana, and the Brazils, is about seventeen inches in length. Its bill is black; and on its cheeks is a bare white skin, marked with black lines, in which the eyes are placed. The general colour of the plumage is green. The forehead is of a chesnut purple; and the crown is blue, which colour blends itself with the green as it passes backwards. On the lower part of the thighs the feathers are red; and the wings are, in different parts, crimson, blue, and black. The tail is green above, near the ends blue, and beneath of a dull red. The legs are brown, and claws black.

This Bird is as beautiful as it is rare; and it is still more amiable for its social temper and gentle

* Synonyms.—Psittacus Severus. *Linn.*—Ara Vert. *Buff.*—Maracana. *Willughby.*—Brasilian Green Macaw. *Latham.*

disposition. It soon grows familiar with persons whom it sees frequently, and is pleased in receiving and repaying their caresses. But it has an aversion to strangers, and particularly to children, and flies at them with great fury.

It is jealous; it is enraged at seeing a young child sharing its mistress's caresses and favours; it tries to dart at the infant, but, as its flight is short and laborious, it can only shew its displeasure by gestures and restless movements, and continues to be tormented by these fits till she leaves the child, and takes the Bird on her finger. It is then overjoyed, murmurs satisfaction, and sometimes makes a noise exactly like the laugh of an old person. Nor can it bear the company of other Parrots, and if one be lodged in the same room, it will deprive it of every comfort.

Its eats nearly the same things that we do. It is particularly fond of bread, beef, fried-fish, pastry, and sugar. It cracks nuts with its bill, and picks them dextrously with its claws. It does not chew the soft fruits, but sucks them, by pressing its tongue against the upper mandible; and the harder sorts of food, such as bread and pastry, it bruizes or chews, by pressing the tip of the lower mandible upon the most hollow part of the upper.

Like all the other Parrots, the Green Macaw uses its claws with great dexterity; it bends forward the hind-toe to lay hold of the fruits, and other things which are given it, and to carry them to its bill. The Parrots, therefore, employ

their toes, nearly in the manner as the Squirrels or Monkies do their fore-paws; they also cling and hang by them. There is also another habit common to the Parrots; they never climb or creep without fastening by the bill; with this they begin, and they use their feet only as a second point of their motion.*

ETHIOPIAN PARROT.†

The Ethiopian or Guinea Parrot is a small species, about the size of a Lark, but it is so often seen in cages as to be a very common species in this country. This may, in some degree, lessen the admiration due to its uncommon elegance, for it is one of the most brilliant of the whole genus. Its general colour is green; its bill, chin, and front, are red, and the rump is blue.

It is very common, not only in Guinea, but in Ethiopia, Java, and the East Indies, where immense flocks of them are seen. In those countries they often commit as much damage to the corn and fruits, as the Sparrows do in Europe.

The trading vessels seldom fail to bring away considerable quantities of them in cages, but they are so tender that most of them die in their passage to our more chill climates. It has also been observed that the firing of a vessel's great guns is

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* Buffon's Birds.

† SYNONYMS.—Psittacus Pullarius. *Linn.*—Perruche á tete Rouge le Guinée, Moineau de Guinée. *Buff.*—Little Red-headed Parrot, or Guinea Sparrow, *Edw.*—Red-headed Guinea Parrakeet. *Lath.*—Ethiopian Parrot. *Kerr.*

fatal to many of them, which drop down dead from fear. Although very imitative of the manners of other birds, it is a difficult thing to teach them to articulate words. Some of them have attained this art, but the instances are very uncommon.

They are exceedingly kind and affectionate towards each other; and it is singular that the male generally perches on the right side of the female. She seldom attempts to eat before him.*

A male and female of this species were lodged together in a large square cage. The vessel which held their food was placed at the bottom. The male most commonly sat on the same perch with the female, and close beside her. Whenever one descended for food the other always followed, and when the wants of nature were satisfied, they hastened together to the highest perch of the cage. They passed four years together in this state of confinement, and from their mutual attentions and satisfaction, it was evident that a strong affection for each other had been excited. At the end of this period the female fell into a state of languor, which had every symptom of old age; her legs swelled, and knots appeared upon them, as if the disease were of the nature of the gout. It was no longer possible for her to descend and take her food as formerly; but the male, ever attentive and alert in whatever concerned her, went and brought it to her, carrying it in his bill and emptying it into hers. He continued to feed her in this manner, with

* Barbot, 220.

the utmost vigilance, for the space of four entire months. The infirmities of his mate, however, increased every day; at length she became no longer able to sit upon the perch; she remained now crouched at the bottom, and from time to time made a few useless efforts to regain the lower perch: the male, who remained close by her, seconded these her feeble efforts with all his power. Sometimes he seized with his bill the upper part of her wing, to try to draw her up to him; sometimes he took her by the bill, and attempted to raise her up, reiterating his efforts for that purpose several times. His countenance, his gestures, his continual solicitude; every thing, in short, indicated in this interesting Bird an ardent desire to aid the weakness of his companion, and to alleviate her sufferings. But the scene became still more interesting when the female was on the point of expiring. The unfortunate male went round and round her without ceasing; he redoubled his assiduities and his tender cares; he attempted to open her bill in order to give her some nourishment; his emotion became every instant redoubled; he went to her and returned with the most agitated air, and with the utmost inquietude: at intervals he uttered the most plaintive cries; at other times, with his eyes fixed upon the female, he preserved the most sorrowful silence. His faithful companion at length expired: he himself languished from that time, and survived her only a few months.*

* Bonnet Contemplation de la Nature.

ASH-COLOURED PARROT.*

This is a well-known Parrot, being the species that is now most commonly brought into Europe. It is near the size of a small Pigeon; and, including its tail, is near twenty inches in length. The bill is black; the cere, and the skin round the eyes are mealy and white. Its plumage is chiefly ash-coloured: the rump and lower part of the belly are hoary, with ash-coloured edges: the feathers on the head, neck, and under parts, are hoary on their edges. The tail is of a bright red, having the shafts of the feathers blackish. The legs are ash-coloured; and the claws blackish.

The Ash-coloured Parrot is a native of Guinea, and several of the inland parts of Africa. It is equal to the Green Parrot, both in the facility and eagerness with which it imitates the human voice. It listens with attention, and strives to repeat; it dwells constantly on some syllables which it has heard, and seeks to surpass every voice by the loudness of its own. We are often surprized at its repeating words or sounds, which were never taught it, and which it could scarely be supposed to have noticed. It seems to set itself tasks, and tries every day to retain its lesson. This engages its attention even in sleep; and, according to Marcgrave, it prattles in its dreams. Its memory, if early cultivated, becomes sometimes astonishing. Rhodiginus

* SYNONYMS.—Psittacus Erithacus. *Linn.*—Perroquet Cendré, ou Jaco. *Buff.*—Hoary Parrot. *Kerr.*—Ash-coloured, and Red Parrot. *Edwards.*

mentions a Parrot which could recite correctly the whole of the Apostles' Creed.

A Parrot, which the Count O'Kelly bought for fifty guineas at Bristol, not only repeated a great number of sentences, but answered many questions: and so strong were its retentive powers that it was able to whistle a variety of tunes. It beat time with all the appearance of science, and so accurate was its judgment, that, if, by chance it mistook a note, it would revert to the bar where the mistake was made, correct itself, and still beating regular time, go through the whole with wonderful exactness. It sang whatever air it was desired, and intimated an express knowledge of every request that was made.

A Parrot, belonging to the sister of the Comte de Buffon, did not seem to perceive when he spoke to himself, but used to fancy that some one addressed him. He often asked his paw, and answered by holding it up. Though he liked to hear the voice of children, he seemed to have an antipathy to them; he pursued and bit them till he drew blood. He had also his objects of attachment, and though his choice was not very nice it was constant. He was excessively fond of the cook-maid; followed her every where, sought for, and seldom missed finding her. If she had been some time out of his sight, the Bird climbed with his bill and claws to her shoulders, lavished his caresses, and would on no account leave her. His fondness had all the marks of close and warm friendship. The girl happened to have a very sore finger, which was

tedious in healing, and so painful as to make her scream. While she uttered her moans the Parrot never left her chamber. The first thing he did every day was to pay her a visit; and this tender condolence lasted the whole time of the cure, when he again returned to his former calm and settled attachment. Yet this strong predilection for the girl seems to have been more directed to her office in the kitchen than to her person, for when another cook-maid succeeded her, the Parrot shewed the same degree of fondness to her the very first day.

Parrots of this species not only imitate discourse, but they also mimic gestures and actions. Scaliger saw one that performed the dance of the Savoyards, at the same time that it repeated their song. The one last mentioned was fond of hearing a person sing, and when he saw him dance, he also tried to caper, but with the worst grace imaginable, holding up in his toes, and tumbling back in a most clumsy manner.

The society which the Parrot forms with man is, from its language, much more intimate and pleasing than what the Monkey can claim from its antic imitation of our gestures and actions. It highly diverts and amuses us; in solitude it is company; it takes part in conversation, it laughs, it breathes tender expressions, or mimics grave discourse; and its words uttered indiscriminately please by their incongruity, and sometimes excite surprize by their aptness. Willughby tells us of a Parrot, which, when a person said to it, "laugh,

Poll, laugh," laughed accordingly, and the instant after screamed out "What a fool to make me laugh!" Another grew old with its master, and shared with him the infirmities of age. Being accustomed to hear scarcely any thing but the words "I am sick;" when a person asked it, "How d'ye do, Poll? how d'ye do?" "I am sick," it replied in a doleful tone, stretching itself over the fire, "I am sick."

Goldsmith says, that a Parrot belonging to King Henry VII. from having been kept in a room next the Thames, in his palace at Westminster, had learned to repeat many sentences from the boatmen and passengers. One day, sporting on its perch, it unluckily fell into the water, but no sooner did the Bird discover its situation than it called out aloud "A boat, twenty pounds for a boat." A waterman happening to be near the place where the Parrot was floating, immediately took it up and restored it to the King, demanding, as the Bird was a favourite, that he should be paid the reward that it had called out. This was refused, but it was agreed that as the Parrot had offered the reward, the man should again refer to its determination for the sum he was to receive—"Give the knave a groat," the Bird screamed aloud, the instant the reference was made.

Mr. Locke, in his Essay on the Human Understanding, has related an anecdote concerning a Parrot, of which, however incredible it may appear to some, he seems to have possessed so much evi-

dence, as at least to have believed it himself.* The story is this: During the government of Prince Maurice in Brazil he had heard of an old Parrot that was much celebrated for answering many of the common questions that were put to it, like a rational creature. It was at a great distance, but so much had been said about it, that his curiosity was roused, and he directed it to be sent for. When it was introduced into the room where the Prince was sitting, in company with several Dutchmen, it immediately exclaimed, in the Brazilian language, "What a company of white men are here!" They asked it, "Who is that man, pointing to the Prince, the Parrot answered, "Some General or other." When the attendants carried it up to him, he asked it, through the medium of an interpreter, for he was ignorant of the language, "From whence do you come?" the Parrot answered, "From Marinnan." The Prince asked, "To whom do you belong?" It answered, "To a Portuguese." He asked again, "What do you do there?" It answered, "I look after the Chickens." The Prince, laughing, exclaimed, "You look after Chickens!" The Parrot in answer said, "Yes, I; and I know well enough how to do it."

This account came directly from the Prince to the above author: he said, that though the Parrot spoke in a language he did not understand, yet he could not but be deceived, for he had in the room

* It is taken from a writer of some celebrity, the author of Memoirs of what passed in Christendom, from 1672 to 1679.

both a Dutchman who spoke Brazilian, and a Brazilian who spoke Dutch: that he asked them separately and privately, and that both agreed very exactly in giving him the Parrot's discourse. If the story is devoid of foundation, the Prince must have been deceived, for there is not the least doubt but he believed it.

The power of imitating exactly articulate discourse, implies in the Parrot a very peculiar and perfect structure of organ; and the accuracy of its memory (though independent of understanding) manifests a closeness of attention and a strength of mechanical recollection that no other Bird possesses in so high a degree. Accordingly all the naturalists have remarked the singular form of its bill, its tongue, and its head. Its bill, round on the outside, and hollow within, has, in some measure, the capacity of a mouth, and allows the tongue to play freely; and the sound striking against the circular border of the lower mandible, is there modified, as on a row of teeth, while the concavity of the upper mandible reflects it like a palate; and hence the animal does not utter a whistling sound, but a full articulation. The tongue, which modulates all the sounds is proportionably larger than in man, and would be more voluble, were it not harder than flesh, and invested with a strong horny membrane.

From the peculiar structure of the upper mandible of its bill, the Parrot has a power, which no other Birds have, of chewing its food. Its bill is like a hand, which throws the food into the gizzard, or an arm, which splits or tears it. The Par-

rot seizes its food sideways, and gnaws it deliberately. The lower mandible has little motion, but that from right to left is most perceptible; and this is often performed when the Bird is not eating, from which some have supposed it to ruminate. In such cases, however, the Bird may be only whetting the edge of this mandible, with which it cuts and bites its aliment.

The females of this species lay their eggs, which are only two, in the hollows of trees, and there is no way of getting at their young, except by cutting down the trees and cleaving them.

YELLOW-WINGED PARROT.*

The length of the Yellow-winged Parrot is about thirteen inches. The bill is whitish, and the cere hoary. The general colour of the body is green; and the feathers on the hind part of the neck and on the back have black margins. The forehead is of a whitish ash-colour; and the top of the head, cheeks, throat, and fore part of the neck, are yellow: the hind head is yellow-green. The thighs and the ridges of the wings are yellow: the remainder of the wings are, in different parts, red, yellow, and green, with the greater quills black. The four middle tail-feathers are green, and yellowish near the end; the others are partly red and partly green. The legs are hoary, and the claws ash-coloured. It is a native of South America.†

* Synonyms.—Psittacus Ochropterus. *Linn.*—Crick à tête et gorge jaune. *Buff.*—Yellow-headed Creature. *Bancroft.*—Yellow-winged Parrot. *Latham.*

† Latham, i. 289.

We know very little of the habits of this Bird in a state of nature, but Father Bougot, who had one of them for some time in his possession, communicated to the Comte de Buffon the following account of its manners and disposition in a tame state :—

" It is (he says) very susceptible of attachment to its master; it is fond of him, but requires frequent caresses, and seems disconsolate if neglected, and vindictive if provoked. It has fits of obstinacy; it bites during its ill humour, and immediately laughs, exulting in its mischief. Correction and rigorous treatment only harden it; gentle usage alone succeeds in mollifying its temper.

" The inclination to gnaw whatever it can reach is very destructive in its effects; it cuts the cloth of the furniture, splits the wood of the chairs, and tears paper, pens, &c. And if it be removed from the spot, its proneness to contradiction will instantly hurry it back. But this mischievous bent is counterbalanced by agreeable qualities, for it remembers readily what it is taught to say. Before articulating it claps its wings and plays on its roost: in the cage it becomes dejected and continues silent; and never prattles well except when it enjoys liberty.

" In its cheerful days it is affectionate, receives and returns caresses, and listens and obeys; though a peevish fit often interrupts the harmony. It seems affected by the change of weather, and becomes silent; the way to reanimate it is to sing beside it,

and it then strives by its noisy screams to surpass the voice which excites it. It is fond of children; in which respect it differs from most other Parrots. It contracts a predilection for some of them, and suffers them to handle and carry it; it caresses them, and if any person then touches them, it bites at him fiercely. If its favourite children leave it, it is unhappy, follows, and calls loudly after them. During moulting it is much reduced, and seems to endure great pain; and this state lasts near three months."

THE TOUCAN TRIBE.

THESE Birds are all natives of the hotter parts of South America, and feed on fruits. They are very noisy, and are generally seen in small flocks of eight or ten in number: they keep moving from place to place in quest of food, going northward or southward as the fruits ripen. They are easily tamed if brought up young, and are in this state very familiar. They breed in the hollows of trees, frequently in places deserted by the Woodpeckers, and the female lays two eggs: it is probable that they have more than one brood in the year.

Their beaks are enormously large and convex: they are bent at the end, hollow, very light, and jagged at the edges. The nostrils are small and round, placed close to the head. The tongue is long, narrow,

and feathered at the edges. The feet, adapted for climbing, have the toes placed two forwards and two backwards.

THE RED-BELLIED TOUCAN.*

This species is a native of Guiana and Brasil, and is about twenty inches in length. The bill is six inches long, and near two thick at the base, and is of a yellowish green colour, and reddish at the tip. The nostrils are at the base of the bill, but not, as in some of the species, covered with feathers. The principal upper parts of the body, and the throat and neck are of a glossy black, with a tinge of green; the lower part of the back, the rump, upper part of the tail, and small feathers of the wings, are the same, with a cast of ash-colour. The breast is of a fine orange: the belly, sides, thighs, and the short feathers of the tail, are bright red: the remainder of the tail is of a greenish black, tipped with red. The legs and claws are black.†

It feeds chiefly on fruits, and is easily tamed, and in that state will eat almost any thing that is offered to it. Pozzo, who bred up a Toucan, and had it perfectly domesticated, tells us that it leaped up and down, wagged its tail, and cried with a voice resembling that of a Magpie. It fed upon the same things that Parrots do, but was most greedy of grapes, which, being plucked off one by one, and

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* Synonyms.—Ramphastos Picatus. *Linn.*—Toucan à Ventre Rouge. *Buff.*—Preacher Toucan. *Latham.*—Toucan, or Brazilian Pye. *Will.*—Red-bellied Toucan. *Kerr.*

† Latham, i. 329.

thrown to it, it would most dexterously catch in the air before they fell to the ground. Its bill, he adds, was hollow, and on that account very light, so that it had but little strength in so apparently formidable a weapon; nor could it peck or strike smartly with it. But its tongue seemed to assist the efforts of this unwieldy machine: it was long, thin, and flat, not unlike one of the feathers on the neck of a Dunghill Cock; this it moved up and down, and often extended five or six inches from the bill. It was of a flesh-colour, and very remarkably fringed on each side with small filaments.

It is probable that this long tongue has greater strength than the thin hollow beak that contains it; and that the beak is only a kind of sheath for this peculiar instrument used by the Toucan in making its nest and in obtaining its provision.

The Toucan builds its nest in the holes of trees, either formed by itself, or which from accident it meets with; and no Bird, says M. de Buffon, better secures its young from external injury than it does. It has not only Birds, Men, and Serpents to guard against, but a numerous train of Monkies, still more prying, mischievous, and hungry, than all the rest. The Toucan, however, sits in its hole, with its great beak, guarding the entrance; and if the Monkey ventures to offer a visit of curiosity, the Toucan gives him such a welcome, that he presently thinks proper to make off, and is glad to escape with safety.*

* There seems much doubt as to the real strength of the beak of the Toucan. This assertion of M. de Buffon seems to contradict what he has before said of the weakness of this enormous and apparently dispropor-

This Bird is said to be in great request in South America, both from the delicacy of its flesh, which is tender and nourishing, and on account of the beauty of its plumage, particularly the feathers of the breast. The skin of this part the Indians pluck off, and, when dry, glue to their cheeks; and this they consider as an irresistible addition to their beauty.

In several parts of South America this Bird has the name of Preacher Toucan, from its habit of perching at the top of a tree, above its companions, while they are asleep, and making a noise resembling ill-articulated sounds; moving its head to the right and left, in order, it is said, to deter the Birds of prey from seizing on them.

THE HORNBILL TRIBE.

THE animals that compose this, as well as the last tribe, have all singularly-disproportioned beaks, the uses of which have not yet been discovered. Those of the present tribe are bent, jagged at the edges, and have frequently a protuberance, somewhat resembling another bill, on the upper mandible. The nostrils are small, round, and placed

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donate member. Willughby, p. 129, says, that notwithstanding its extreme lightness "yet it is of a bony substance, and therefore it is not to be wondered, that, dexterously used, it should by many strokes pierce a tree, having, perchance, the instinct to chuse a rotten one." It is from this writer that Buffon has derived the latter part of the above account.

behind the base of the bill. The tongue is small and short. The legs are scaly: the toes placed three forward and one backward; the middle one is connected to the outermost as far as the third joint, and to the innermost as far as the first.

These Birds seem to hold the same place on the old continent, as the Toucans do on the new; and probably the same food is common to both. In confinement, however, these are said to eat both flesh and fish.

THE PIED HORNBILL.*

The Pied Hornbill is about two feet six inches long, and in bulk somewhat bigger than a Crow. The bill is more than five inches in length, having on its upper part a protuberance rounded at the top, reaching two-thirds of its length, and tending to a sharp edge in front: this extends beyond the eyes, and in the fore-part is black. The base and edges of both mandibles, as well as a small portion of the upper part, where it receives the protuberance, are also black: the general colour of both of these is a dingy yellow. On the upper part of the eye-lid are ten or more stiff black bristles. The plumage is in general black, some of the feathers inclining on their margins to green; but the lower part of the breast, the belly, and the thighs, and the tip of the wings and tail, except one outer feather in each of the former, and the two middle feathers in the lat-

* Synonyms.—Buceros Malabaricus. *Linn.*—Calao de Malabar. *Buff.*—Malabar Hornbill. *Kerr.*—Pied Hornbill. *Lath.*——*Latham's Synopsis, vol.* 1. *tab.* 2.

ter, which are coloured like the rest of the body, are black. The legs are black, and very short: the two outermost toes are connected to the middle one as far as the first joint.

This Bird is a native of the East Indies; and the manners of one that was brought over into England were somewhat peculiar; it would leap forwards, or sideways, with both legs at once, like a Magpie, or Jay, never walking. Its general air was rather stupid and dull, though, when surprised, it would sometimes put on a fierce look. It would eat lettuce, after bruising them with its bill; it would also devour Rats, Mice, small Birds, or raw flesh, when given to it. It had different tones of voice on different occasions; sometimes a hoarse sound in the throat, most like *ouck, ouck*; at other times a very hoarse and weak noise, not unlike the clucking of a Turkey-hen. He used to display his wings, and enjoy himself in the warm sun; but shivered in the cold: and, as winter approached, he died, unable to bear the severity of our climate, so different to his nature from that he had left.*

THE AFRICAN HORNBILL.†

The length of the African Hornbill is near four feet. Its bill is about ten inches long, and the horny excrescence upon this appears to be cut, with an aperture somewhat resembling the form

* Latham's Synopsis, i. 349.

† Synonyms.—Buceros Africanus. *Linn.*—Brac ou Calao d'Afrique. *Buff.*—African Hornbill. *Lath.*

of a club on cards, or an iron lance. This excrescence is of the same substance as the bill, but thinner, and yields to pressure. The aperture is about an inch long, and half an inch wide, having on the inside a black membrane, of use in preventing the introduction of any foreign body into the horn, which communicates interiorly with the head. In a young state this opening is wanting, and the horn has then somewhat of a semi-circular form; and the Bird in this state appears to be the same that Bruce discovered and arranged as a new species, with the name of Abyssinian Hornbill.*

This species walks very heavily, and its flight is not rapid, but low, and in general very short. Its food consists principally of insects and lizards. The male and female are always to be seen in company, or sometimes there are two females to one male, but never more. The Negroes esteem it sacred, never killing it themselves, and always, if possible, preventing the Europeans from firing at it. They have a superstition that the death of one of these birds gives cold to the whole district. M. Geoffroy, who examined several of them, was observed to kill one, they reproached him with the utmost severity, and every one present put his nose to the excrescence on the bill, to secure themselves from the hurtful consequences.†

The general colour of the plumage is a sooty black; some of the large feathers of the wings are,

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* Erkoom, Abba-gumba, Teir-el-naciba. *Bruce*, v. p. 169.

† Geoffroy in Actes de la Societe d'Histoire Naturelle de Paris, tom. i.

however, perfectly white. These Hornbills are found in various parts of Africa, but are not common on the coasts. In general they only run along the ground, but being of a very distrustful disposition, they are soon raised by alarm, when they usually fly to a great distance, before they again alight.

They build in large thick trees, and form a covered nest, like that of a magpie, but three or four times as large. This is placed firmly on the trunk, and the entrance to it is always on the east side. They have been sometimes known to have so many as eighteen young.

THE RHINOCEROS HORNBILL*.

The protuberance of the beak of the Rhinoceros Hornbill is so large, and so much recurved, as to appear rather an enormous deformity, than a natural production. The bird is somewhat smaller than a Turkey, and of a black colour, except the tail, which is white, and marked with a bar of black. The beak is near a foot long, and of a pale yellow colour.

These singular animals, which are found in Sumatra, and several other parts of the east, feed on flesh and carrion. They are said to follow the hunters for the purpose of feeding on the entrails of the beasts that are killed. We are told also that they chace rats and mice, and, after pressing them flat with

* SYNONYMS.—Buceros Rhinoceros. *Linn.*—Calao Rhinoceros. *Buff.*—Rhinoceros Bird, or Horned Indian Raven. *Willughby.*—Great Hornbill. *Shaw's Nat. Mis.*

their bill, in a peculiar manner, toss them up into the air, and swallow them whole immediately on their descent.

THE ANI TRIBE.

THE present tribe had its Linnean denomination from its living entirely on insect food. The bill is compressed at the sides, considerably arched, thin, sharp at the top, and nearly of an oval form. The nostrils are round and open; and the tongue is flat at the sides, and slender at the end. Except in one species, the toes are placed two and two, for climbing.

THE LESSER ANI.*

This species is about the size of a Blackbird. The bill is blackish, about half an inch long, hooked at the end, and much compressed, rising to a sharp ridge at the top. The colour of the body is black, in some parts glossed with purple, and, about the neck, faintly tinged with green. The base of the bill and the eye-lids are furnished with long hairs. The tail is wedge-shaped, about six inches long; and the legs are black.

These Birds are found in several of the West

* SYNONYMS.—Crotophaga Ani. *Linn.*—Ani des Savanes. *Buff.*—Cacalototl. *Ray.*—Razor-billed Blackbird. *Catesby.*—Lesser Ani. *Latham.*—*Latham's Synopsis, vol. i. tab. 13.*

India Islands, and in some parts of South America. Contrary to the general custom, many of them lay their eggs in the same nest, towards the formation of which they unite in concert; and after depositing the eggs, sit on them close to each other in order to hatch them, each exerting the utmost of her efforts for the public good. When the young make their appearance, the parents, without any reserve, do their best to feed the whole flock. A still greater singularity than this occurs in each female: as soon as she lays her eggs, she covers them over with leaves, which she also does whenever she is obliged to leave the nest for food. In a cold climate this might, perhaps, seem necessary; but why it should be wanted in a hot one, especially as it has not been observed in other Birds, is somewhat difficult to understand. They have generally two broods in a year.*

They feed on worms, insects, fruit, and grain, and generally live in flocks of from ten to thirty in number. They are not difficult to be shot, being much tamer than many other Birds; but they chatter much at the sight of a man, and, like our *Jays*, by this means hinder his sport with other game, without making him any amends in their own flesh, which is both rank and unpleasant.

* Latham, i. 360.

THE CROW TRIBE.

FEW animals are more universally dispersed over the world than the different species of Crow, for some of them are to be found in almost every climate. They are very prolific, clamorous, and, in general, sufficiently social to unite in flocks. Most of them make their nests in trees, and the number of young that they usually produce is five or six. They feed promiscuously on animal and vegetable food. Some of them, when in great numbers, are supposed to be injurious to man, in devouring grain; but they seem to make ample amends for this injury by the immense quantities of noxious insects and other vermin which they destroy.

They have a strong bill, with the upper mandible a little bent, the edges sharp, and, in general, a small notch near the tip. The nostrils are covered with bristles reflected over them; and the tongue is divided at the end. The toes are three forward, and one backward; the middle one joined to the outer one as far as the first joint.

THE RAVEN.*

The Raven is an inhabitant not only of our own island, but of most other parts of the world.—Among the ancients it was esteemed a Bird of much importance; and the various changes and modula-

* SYNONYMS.—Corvus Corax. *Linn.*—Corbeau. *Buff.*—*Br... Birds, p. 66.*

tions of its voice were studied with the greatest attention, and were too often used by designing men to mislead the unwary.

It frequents the neighbourhood of great towns, where it is useful in devouring the carrion and filth, which it scents to a vast distance. It is a cunning Bird, and generally careful in keeping beyond the reach of a gun.

When brought up young, the Raven becomes very familiar; and, in a domestic state, he possesses many qualities that render him extremely amusing. Busy, inquisitive, and impudent, he goes every where, affronts and drives off the Dogs, plays his pranks on the poultry, and is particularly assiduous in cultivating the good-will of the cook-maid who is generally his favourite in the family. But then with the amusing qualities of a favourite, he often also has the vices and defects. He is a glutton by nature, and a thief by habit. He does not confine himself to petty depredations on the pantry or the larder; he soars at more magnificent plunder—at spoils that he can neither exhibit nor enjoy, but which, like a miser, he rests satisfied with, having the satisfaction of sometimes visiting and contemplating them in secret. A piece of money, a tea-spoon, or a ring, are always tempting baits to his avarice: these he will slily seize upon, and, if not watched, will carry to his favourite hole.

Mr. Montagu was informed by a gentleman, that his butler having missed many silver spoons, and other articles, without being able to account for the mode in which they disappeared, at last observed a

tame Raven, that was kept about the house, with one in his mouth; and, on watching him to his hiding-place, discovered there upwards of a dozen more.*

Notwithstanding the injury these Birds do to the farmer, a vulgar respect is paid to them, as being the Birds that fed the Prophet Elijah in the wilderness. This prepossession in favour of the Raven is of a very ancient date, as the Romans themselves, who thought the Bird ominous, paid to it, from motives of fear, the most profound veneration.

A Raven, as Pliny informs us, that had been kept in the Temple of Castor, flew down into the shop of a taylor, who was highly delighted with its visit. he taught the Bird several tricks; but particularly to pronounce the names of the Emperor Tiberius, and the whole Royal Family. The taylor was beginning to grow rich by those who came to see this wonderful Raven, till an envious neighbour, displeased at his success, killed the Bird, and deprived the taylor of all his future hopes of fortune. The Romans, however, thought it necessary to take the poor taylor's part; they accordingly punished the man who offered the injury, and gave the Raven all the honours of a magnificent interment.

The female builds her nest early in the spring, in trees and the holes of rocks, in which she lays five or six blueish-green eggs, spotted with brown. She sits about twenty days, during which time she is constantly attended by the male, who not only pro-

* Montagu, Art. Raven.

vides her with abundance of food, but, whenever she leaves the nest, he takes her place.

Of the perseverance of the Raven in the act of incubation, Mr. White has related the following pleasing anecdote :—In the centre of a grove near Selborne, there stood an Oak, which, though shapely and tall on the whole, bulged out into a large excrescence about the middle of the stem.—On this tree a pair of Ravens had fixed their residence for such a series of years, that the oak was distinguished by the title of "*The Raven-tree.*" Many were the attempts of the neighbouring youths to get at this *eyry* : the difficulty whetted their inclinations, and each was ambitious of surmounting the arduous task ; but, when they arrived at the swelling, it jutted so out in their way, and was so far beyond their grasp, that the most daring lads were awed, and acknowledged the undertaking to be too hazardous. So the Ravens built on, nest upon nest, in perfect security, till the fatal day arrived in which the wood was to be levelled. This was in the month of February, when those Birds usually sit. The saw was applied to the butt, the wedges were inserted into the opening, the woods echoed to the heavy blows of the beetle or mallet, the tree nodded to its fall ; but still the dam sat on. At last, when it gave way, the Bird was flung from her nest ; and, though her parental affection deserved a better fate, was whipped down by the twigs, which brought her dead to the ground.

The Raven feeds chiefly on small animals, and is said to destroy Rabbets, young Ducks, and Chick-

ens, and sometimes even Lambs, when they happen to be dropped in a weak state. In the northern regions it preys in concert with the White Bear, the Arctic Fox, and the Eagle: it devours the eggs of other Birds, and eats shore-fish, and shell-fish; the latter it rises into the air with, and drops from on high to break them, and get at the contents. In the act of feeding, it changes its prey from the bill to the feet, and from the feet to the bill, by way of ease. Willughby says, that it may be trained to fowling like a Hawk.*

Le Vaillaint found a variety of the Raven, differing from ours only in size, and the greater curvature of its beak, in Saldanha-bay, at the Cape of Good Hope, where, he informs us, it unites in large flocks, often attacking and killing the young Antelopes.†

Its faculty of scent must be very acute; for in the coldest of the winter-days, at Hudson's Bay, when every kind of effluvia is almost instantaneously destroyed by the frost, Buffalos and other beasts have been killed where not one of these Birds was seen; but in a few hours scores of them would gather about the spot to pick up the offal and blood.‡

The flesh of the Raven is eaten by the natives of Greenland: they also use the skins sewed together as an inner garment, and form the split-quills into fishing lines. The quills are in great request in our own country for the tuning of harpsichords.

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* p. 132. † Ois d'Afrique, ii. pl. 51. ‡ Hearne, 404.

THE CARRION CROW.*

The Carrion Crow is less than the Raven, but similar to it in colour, external appearance, and many of its habits. These Birds live chiefly in pairs, in the woods, where they build their nests on the trees. The female lays five or six eggs, much like those of the Raven, and, while sitting, is always fed by the male. They feed on putrid flesh of all sorts, as well as on worms, insects, and various kinds of grain. Like the Ravens, they will sometimes pick out the eyes of Lambs when just dropped. They also do much mischief in Rabbet-warrens, by killing and devouring the young Rabbets; and Chickens and young Ducks do not always escape their attacks.

"We once saw this bird (says Mr. Montagu) in pursuit of a Pigeon, at which it made several pounces like a Hawk; but the Pigeon escaped by flying in at the door of a house. We have also seen it strike a Pigeon dead from the top of a barn." It is so bold a Bird, that neither the Kite, the Buzzard, nor the Raven, approach its nest without being attacked and driven away. Even the Peregrine Falcon is insulted when it has young, and frequently at one pounce is brought to the ground.†

When Hens lay their eggs in hedge-bottoms or stackyards, Crows are often caught in the act of devouring them. On the northern coast of Ireland

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* Synonyms.—Corvus Corone. *Linn.*—Corbine. *Buff.*——*Penn. Brit. Zool. vol.* 1. *tab* 34.

† Montagu, Art. Crow-carrion.

a friend of Dr. Darwin saw above a hundred Crows at once preying upon Muscles; each Crow took a Muscle up in the air twenty or forty yards high, and let it fall on the stones, and thus, by breaking the shell, got possession of the animal. A certain ancient philosopher walking along the sea-shore to gather shells, one of these unlucky Birds mistaking his bald head for a stone, dropped a shell-fish upon it, and killed at once a philosopher and an oyster.*

The familiarity and audacity of the Crows in some parts of the East is astonishing. They frequent the courts of the Europeans, and, as the servants are carrying in dinner, will alight on the dishes, and carry away the meat, if not driven off by persons who attend with sticks for that purpose.†

In some parts of North America they are extremely numerous, and destroy the new-sown maize by pulling it out of the ground and devouring it. The ripening plants they also injure very greatly, by picking a hole in the leaves which surround the ears, and thus exposing them to corruption by letting in the rain. The inhabitants of Pennsylvania and New Jersey allowed a reward of three-pence or four-pence a head for destroying them; but the law was soon repealed, on account of the expence which it brought upon the public treasury.‡

There are at present more of these Birds bred in England than in any other country in Europe. In

* Zoonomia. † Penn. Outl. ii. 91.
‡ Penn. Arct. Zool. i. 288.

the reign of Henry VIII. Crows were become so numerous, and were thought so prejudicial to the farmer, that they were considered as an evil worthy of parliamentary redress, and an act was passed for their destruction, in which also Rooks and Choughs were included. Every hamlet was ordered to destroy a certain number of Crows nests for ten years; and the inhabitants were obliged at stated times to assemble during that time to consult of the most proper and effectual means of extirpating them.*

The following are singular modes adopted in some countries for taking these Birds :—A Crow is fastened alive on its back firmly to the ground, by means of a brace on each side, at the origin of the wings. In this painful position the animal struggles and screams; the rest of its species flock to its cries from all quarters, with the intention, probably, of affording relief. But the prisoner, grasping at every thing within reach to extricate himself from his situation, seizes with his bill and claws which are left at liberty, all that come near him, and thus delivers them a prey to the bird-catcher.—Crows are also caught with cones of paper baited with raw flesh; as the Crow introduces his head to devour the bait, which is near the bottom, the paper, being besmeared with birdlime, sticks to the feathers of the neck, and he remains hooded. Unable to get rid of this bandage, which covers his eyes entirely, the Crow rises almost perpendicularly into the air, the better to avoid striking against any ob-

* Penn. Brit. Zool. i. 220.

ject, till, quite exhausted, he sinks down near the spot from which he mounted.

If a Crow is put into a cage, and exposed in the fields, his calls generally attract the attention of others that are in the neighbourhood, who flock round their imprisoned brother. This plan is sometimes adopted in order to get these Birds within gun-shot; for, however shy they might otherwise be, their attention is said in this case to be so much occupied on their friend, as to render them almost heedless of the gunner's approach.

Willughby says, that this Bird is capable of being taught to articulate several words with considerable distinctness.* By the ancients it was esteemed, particularly when it appeared on the left hand, as a Bird of bad omen.

Although the Crow abounds in Great Britain, it is so rare in Sweden, that Linnæus speaks of it as a Bird that he never knew killed in that country but once.

These Birds are often found white, or pied, an accident that happens more frequently to black Birds than to any others.†

ROOK.‡

The Rook is about the size of the Carrion Crow, but its plumage is more glossy: it also differs in having its nostrils, and the root of the bill, which

* Willughby, 123. † Penn. Brit. Zool. i. 221.

‡ Synonyms.—Corvus Frugilegus. *Linn.*—Freux ou Frayonne. *Buf.* —*Bew. Birds, p.* 71.

in the Crow, is covered with bristly hair, perfectly bare, arising from its thrusting the bill continually into the earth in search of worms and other food.

Besides insects, the Rooks feed on different kinds of grain, causing by this means some inconvenience to the farmer; but this seems greatly repaid by the good they do to him, in extirpating the maggots of some of the most destructive of the Beetle tribe.—In Suffolk, and in some parts of Norfolk, the farmers find it their interest to encourage the breed of Rooks, as the only means of freeing their grounds from the grub, from which the Cock-chafer comes, which in this state destroys the roots of corn and grass to such a degree, "that, (says Mr. Stillingfleet, one of the most accurate observers of nature this country ever produced), I have myself seen a piece of pasture-land, where you might turn up the turf with your foot." An intelligent farmer in Berkshire informed this gentleman, that one year, while his men were hoeing a field of turnips, a great number of Rooks alighted in a part of it, where they were not at work. The consequence was, a remarkably fine crop in this part, while in the remainder of the field there were scarcely any turnips that year.*

These are gregarious Birds, being sometimes seen in flocks so great as to darken the air in their flight. They build their nests on high trees, close to each other, generally selecting a large clump of the tallest trees for this purpose. When once settled, they

* Stillingfleet's Tracts.

every year frequent the same place. Rooks are, however, but bad neighbours to each other, for they are continually fighting and pulling to pieces one another's nests. These proceedings seem inconsistent with living in such close community; and yet, if a pair offers to build on a single tree, the nest is plundered and demolished at once. Some unhappy pairs are not permitted to finish any nest till the rest have all completed their buildings. As soon as they get a few sticks together, a party comes and demolishes the whole. It generally happens that one of the pair is stationed to keep guard, while the other goes abroad for materials.—From these circumstances it was, that our cant-word *rooking*, for cheating, originated.*

As soon as the Rooks have finished their nests, and before they lay, the cocks begin to feed the hens, who receive their bounty with a fondling tremulous voice, and fluttering wings, and all the little blandishments that are expressed by the young while in a helpless state. This gallant deportment of the males is continued through the whole season of incubation.

New comers are often severely beaten by the old inhabitants, (who are not fond of intrusions from other societies) and even frequently driven quite away. Of this an instance occurred near Newcastle. In the year 1788, a pair of Rooks, after an unsuccessful attempt to establish themselves in a rookery at no great distance from the Exchange, were com-

* Willughby, 124.

pelled to abandon the attempt, and take refuge on the spire of that building; and, although constantly interrupted by other Rooks, they built their nest on the *top of the vane*, and brought forth their young, undisturbed by the noise of the populace below them; the nest and its inhabitants were consequently turned about by every change of the wind. They returned and built their nest every year on the same place, till the year 1793, soon after which the spire was taken down. A small copper-plate was engraved, of the size of a watch-paper, with a representation of the top of the spire and the nest; and so much pleased were the inhabitants and other persons with it, that as many copies were sold as produced to the engraver the sum of ten pounds.

A remarkable circumstance respecting these Birds occurred a few years ago at Dallam Tower, in Westmoreland, the seat of Daniel Wilson, Esq.—There were two groves adjoining to the park, one of which had for many years been the resort of a number of Herons, that regularly every year built and bred there. In the other was a very large rookery. For a long time the two tribes lived peaceably together. At length the trees of the heronry were, in the spring of 1775, cut down, and the young brood perished by the fall of the timber. The parent Birds, not willing to be driven from the place, endeavoured to effect a settlement in the rookery. The Rooks made obstinate resistance; but, after a very violent contest, in the course of which many of the Rooks and some of the Herons lost their lives, the latter at length succeeded in obtaining possession of some of

the trees, and that very spring built their nests afresh. The next season the same contest took place, which, like the former, was terminated by the victory of the Herons. Since this time peace seems to have been agreed upon between them: the Rooks have relinquished part of the grove to the Herons, to which part alone they confine themselves: and the two communities appear to live together in as much harmony as they did previous to the dispute.*

The following anecdote of this sagacious community is related by Dr. Percival, in his Dissertations: "A large colony of Rooks had subsisted many years in a grove on the banks of the river Irwell, near Manchester. One serene evening I placed myself within the view of it, and marked with attention the various labours, pastimes, and evolutions of this crowded society. The idle members amused themselves with chasing each other through endless mazes; and, in their flight, they made the air resound with an infinitude of discordant noises. In the midst of these playful exertions, it unfortunately happened that one Rook, by a sudden turn, struck his beak against the wing of another. The sufferer instantly fell into the river. A general cry of distress ensued. The Birds hovered, with every expression of anxiety, over their distressed companion. Animated by their sympathy, and, perhaps, by the language of counsel known to themselves, he sprang into the air, and, by one strong effort, reached the point of a rock which projected into the water. The exul-

* Hutchinson's Cumberland, i. 18.

tation became loud and universal ; but alas ! it was soon changed into notes of lamentation ; for the poor wounded Bird, in attempting to fly towards his nest, dropped into the river, and was drowned, amidst the moans of his whole fraternity."

There seems a wonderful antipathy between these Birds and the Raven : Mr. Markwick says that in the year 1778, as soon as a Raven had built her nest in a tree adjoining to a very numerous rookery, all the Rooks immediately forsook the spot, and have not returned to build there since. At the Bishop of Chichester's rookery, at Broomham near Hastings, upon a Raven's building her nest in one of the trees, all the Rooks forsook the spot ; they, however, returned to their haunts in the following autumn, and built their nests there the succeeding year. It is no very difficult task to account for this antipathy : the Raven will scarcely suffer any Bird whatever to come within a quarter of a mile of its nest, being very fierce in defending it. It besides seizes the young Rooks from their nests to feed its own. This Mr. Lambert was eye-witness to at Mr. Seymer's, at Harford, in Dorsetshire, for there was no peace in the rookery night or day, till one of the old Ravens was killed, and the rest were destroyed.*

They begin to build in March, and, after the breeding season is over, forsake their nesting trees, and for some time roost elsewhere ; but they have always

* Linn. Tran. i. 127, and iii. 15.

been observed to return in August. In October they repair their nests.*

Dr. Darwin has remarked that a consciousness of danger from mankind is much more apparent in Rooks than in most other Birds. Any one who has in the least attended to them will see that they evidently distinguish that the danger is greater when a man is armed with a gun than when he has no weapon in his hands. In the spring of the year, if a person happens to walk under a rookery with a gun in his hand, the inhabitants of the trees rise on their wings, and scream to the unfledged young to shrink into their nests from the sight of the enemy. The common people observing this circumstance so uniformly to occur, assert that Rooks can smell gunpowder.

In England these Birds remain the whole year, but both in France and Silesia they are migratory. It is a singular circumstance that the island of Jersey should be entirely without Rooks, particularly when we know that they frequently fly over from this country to France.†

The young Birds, when skinned and made into pies, are, though very coarse meat, much esteemed by some persons.

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* Penn. Brit. Zool. i. 222.

† Latham's Second Supplement, 108.

THE JACKDAW.†

The Jackdaws are common Birds in England, where they remain the whole year; but in some parts of the Continent they are migratory.

They frequent old towers and ruins in great flocks, where they build their nests; and they have been sometimes known to build in hollow trees, near some rookery, and to join the Rooks in their foraging parties. In some parts of Hampshire, from the great scarcity of towers or steeples, they are constrained to form their nests under-ground, in the Rabbet holes: they alſo build in the interstices, between the upright and cross stones of Stonehenge, far out of the reach of the shepherd boys, who are always idling about that place. In the Isle of Ely, from the want of ruined edifices, they often build their nests in chimnies. In a grate, below one of these nests, which had not been used for some time, a fire was lighted; the materials of the nest caught fire, and they were in such quantity, that it was with great difficulty the house could be preserved from the flames.*

These Birds live principally on worms, and the larve of insects, but the editor of the present work, in company with a friend, was witness to a singular deviation from their usual mode of feeding. He was walking in the Inner Temple garden, about the

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* SYNONYMS.—Corvus Monedula. *Linn.* Choucas. *Buffon.*——*Bew. Birds, p.* 73.—*Penn. Brit. Zool. vol. i. tab.* 34.

† White's Selborne.—Latham's Second Supplement.

middle of May last, when he observed a Jackdaw hovering, in a very unusual manner, over the Thames. A barrel was floating near the place, a buoy to a net that some fishermen were hauling. and it was at first thought the bird was about to alight upon it. This, however, proved a mistake, for he descended to the surface of the water, and fluttered for a few seconds with his bill and feet immersed; he then rose, flew to a little distance, and again did the same, after which he made a short circuit, and alighted on a barge, about fifty yards from the garden, where he devoured a small fish. When this was done, he made a third attempt, caught another, and flew off with it in his mouth.

Jackdaws are easily tamed, and may, with a little difficulty, be taught to pronounce several words. They conceal such parts of their food as they cannot eat, and often along with it small pieces of money, or toys, frequently occasioning, for the moment, suspicions of theft in persons who are afterwards proved innocent. They may be fed on insects, fruit, grain, and small pieces of meat.

In Switzerland there is found a variety of the Jackdaw, that has a white ring round its neck. In Norway, and other cold countries, Jackdaws have been seen perfectly white.

THE JAY*.

This beautiful bird is well known in our woods; it builds in the trees an artless nest, composed of

* SYNONYMS.—Corvus Glandarius. *Linn*,—Geay. *Buffon*.—*Bew. Birds, p.* 80.

sticks, fibres, and twigs, in which it lays five or six eggs. Its delicate cinnamon coloured back and breast, with blue wing coverts, barred with black and white, render it one of the most elegant birds produced in these islands. Its bill is black, and chin white; and on its forehead is a beautiful tuft of white feathers, streaked with black, which it has the power of erecting at pleasure. Its voice is harsh, grating, and unpleasant.

When kept in a domestic state, the Jay may be rendered very familiar, and it will imitate a variety of sounds. One of them has been heard to imitate so exactly the sound made by the action of a saw, as to induce passengers to suppose that the person who kept it had a carpenter at work in the house.

"A Jay kept by a person we were acquainted with, at the approach of cattle, had learned to hound a cur Dog upon them, by whistling and calling upon him by his name. One winter, during a severe frost, the Dog was by this means excited to attack a Cow that was big with Calf, when the poor animal fell on the ice and was much hurt. The Jay was complained of as a nuisance, and its owner was obliged to destroy it."*

The young keep with the old ones till the next pairing time, when they chuse each its mate, and separate, in order to produce a new progeny. The old birds, when enticing their fledged young to follow them, emit a noise like the mewing of a Cat.

* Bewick's Birds, i. 82.

These birds feed in general on acorns, nuts, seeds, and fruit of all kinds; and in summer they are often found injurious to gardens, from their devouring the peas and cherries.

THE MAGPIE.*

The Magpie is an elegant Bird, and feeds, like the Crow, on almost every thing, as well animal as vegetable. It forms its nest with great art, leaving a hole in the side for admittance, and covering the whole upper part with a texture of thorny branches, closely entangled, by which a retreat is secured from the rude attacks of other birds: the inside is furnished with a sort of mattrass, composed of wool and other soft materials, on which the young, which are generally seven or eight in number, repose.

It is a crafty and, in a tame state, a familiar Bird, and may be taught to pronounce not only words, but short sentences, and even to imitate any particular noise that it hears.

Plutarch relates a singular story of a Magpie belonging to a barber at Rome. This Bird could imitate, to a surprizing extent, almost every thing that it heard. Some trumpets happened one day to be sounded before the shop, and for a day or two the Magpie was quite mute, and seemed pensive and melancholy. This surprized all who knew it,

* Synonyms.—Corvus Pica. *Linn.*—Pie. *Buff.*—Pianet. *Willughby.*—*Bew. Birds, p. 75.*

and they supposed that the sound of the trumpets had so stunned it as to deprive it at the same time both of voice and hearing. It appears, however, that this was not the case, for, says our author, the Bird had been all the time occupied in profound meditation, and was studying how to imitate the sound of the trumpets; for in the first attempt it perfectly imitated all their repetitions, stops, and changes. This new lesson, however, made the Bird entirely forget every thing that it had learned before.

Like the other Birds of its tribe, the Magpie is greatly addicted to stealing, and when it is satiated will frequently even hoard up its provisions. It often commits ravages in Rabbet-warrens and poultry yards, by killing the young animals, and destroying eggs. It may be taken by means of a steel trap baited with a Rat or dead Bird.

THE CINEREOUS CROW.*

The Cinereous Crow, a Bird confined to North America and very common about Hudson's Bay, is so small as seldom to weigh three ounces. Its plumage is brown-grey; the feathers are very long, soft, and silky, and in general so much unwebbed as in many parts of the body to resemble hair.

This bird is very familiar, and fond of frequenting habitations, either houses or tents; and so

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* SYNONYMS.—Corvus Canadensis. *Linn.*—Geay-brun de Canada. *Buff.*—Whiskey Jack, or Geeza, *Hearne.*—Cinereous Crow. *Latham*

much given to pilfering, that no kind of provisions it can come at, either fresh or salted, are safe from its depredations. It is so bold as to come into tents, sit on the edge of the kettle, when hanging over the fire, and steal victuals out of the dishes.

It is very troublesome to the hunters, both English and Indian, frequently following them a whole day; it will perch on a tree while the hunter is baiting his Martin-traps, and as soon as his back is turned go and eat the baits.

It is a kind of mock-bird, and has, of course, a variety of notes; is easily tamed, but never lives long in confinement, always pining away (notwithstanding its eating freely) from the moment it is caught.

The care that this Bird takes in laying up in summer a stock of fruit for winter provision, when no fruit is to be had abroad, is a remarkable instance of foresight in the Bird tribe, for this propensity is uncommon among them.

Its nest is built in trees, exactly in the manner of those of the Blackbird and Thrush; and the female lays four blue eggs, but seldom hatches more than three young ones. It breeds early in the spring, and though it sometimes steals flesh it never eats it, but feeds principally on fruits, moss, and Worms.*

* Hearne, 405.

THE RED-LEGGED CROW.*

This species, which is partial to rocky and mountainous habitations, is not very common in any part of the world; it is, however, found in some particular parts both of Asia and Africa. In our country it frequents some places in Cornwall and North Wales, inhabiting there the cliffs and ruinous castles along the shores. A few are found on Dover-cliff, where they came entirely by accident: a gentleman in the neighbourhood had a pair sent from Cornwall as a present, which escaped, and stocked those rocks. They are not constant to their abode, but frequently, in the course of the year, desert the place for a week or ten days at a time.

The colour of this Crow is a fine blue or purple black; and its bill and legs are of a bright and deep orange.†

It is a very tender Bird, of an elegant form, and unable to bear very severe weather. Active, restless, and meddling, it is not to be trusted where things of consequence lie. It is much taken with glittering objects, and very apt to snatch up bits of lighted sticks, so that instances have occurred of houses being set on fire by it. The injury that it does to thatched houses is sometimes very great, for, tearing holes into them with its long bill in search of worms and

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* Synonyms.—Corvus Graculus. *Linn.*—Coracias. *Buffon.*—Cornish Chough. *Willughby.*—Killegrew. *Charlton.*—Cornwall Kae. *Sibbald.*—Red-legged Crow. *Penn.*——*Bew. Birds, p. 77.*—*Penn. Brit. Zool. vol. i. tab.* 35.

† Penn. Brit. Zool. i. 229.

insects, the rain is admitted and quickens their decay. It will also often pick out lime from walls in search of spiders and flies.

These Birds commonly fly very high, and make a more shrill noise than the Jackdaw. The Cornish peasantry attend so much to them, that it is very common to see them tame in their gardens. They shriek out aloud at the appearance of any thing strange or frightful; but when applying for food, or desirous of pleasing those who usually fondle them, their chattering is very soft and engaging.

When tame they are very docile and amusing, and extremely regular to their time of feeding. But, however familiar they may be to their immediate friends, they will admit no stranger whatever to touch them.

Their nests are built about the middle of the cliffs, or in the most inaccessible parts of ruins. The eggs, which are four or five, are somewhat longer than those of the Jackdaw, and of a cinereous white, marked with irregular dusky blotches. From their being very tender, these Birds are seldom seen abroad but in fine weather.*

THE ORIOLE TRIBE.

The characteristics of this tribe are a straight, conic, very sharp-pointed, bill, with the mandibles

* Borlase, 243.

equal in length, the edges sharp and inclining inwards: the nostrils small, at the base of the bill, and partly covered: the tongue cleft at the end: the toes three forward and one backward, and the middle one joined near the base to the outer.

It is a noisy, gregarious, and voracious race, confined almost exclusively to America. Most of the species form pendulous nests, from the exterior branches of the trees, which secure them from the rapacious animals. Many of these are usually constructed on one tree. The Birds are extremely numerous in many parts, and feed, most of them, on fruits, but some on insects and grain.

THE RED-WINGED ORIOLE *

Is about the size of a Starling, being near nine inches long. The bill is black, and almost an inch in length. The whole body is of a deep black, except the upper parts of the wings, which are of a full red. The legs are black.

These Birds are peculiar to America, in some parts of which they sometimes appear in such immense flocks, that frequently at one draw of a net more than three hundred are taken. They feed on wheat, maize, &c. and are exceedingly destructive. Their common name in America is *Maize-thief*: they seldom attack this corn except just after it is sown, or afterwards when the ear is green, when, pecking

* SYNONYMS.—Oriolus Phoeniceus. *Linn.*—Commandeur. *Buff.*—Scarlet-feathered Indian Bird. *Willughby.*—Red-winged Starling. *Catesby.*—Red-bird. *Brickel.*—Red-winged Oriole. *Latham.*

a hole in the side, the rain is admitted, and the grain spoiled. They are supposed to do this in search of insects. The farmers sometimes attempt their destruction, by steeping the maize in a decoction of white hellebore before they sow it: the Birds that eat this prepared corn are seized with a vertigo and fall down.* Bold and voracious as they are, the flock may frequently be shot at two or three times before they can be driven off; indeed it often happens, that during the second loading of the gun the number becomes much greater than before.

Catesby tells us, that these Birds, in Carolina and Virginia, always breed among the rushes, the points of which they weave so as to form a sort of roof or shed, under which they build their nest, at so judicious a height, that it can never be reached even by the highest floods. Latham says, that they build between the forks of trees, three or four feet from the ground, in swamps, which are seldom penetrable by man.†

They are easily taken in traps, in thickets that they frequent, and without difficulty are rendered tame, and even taught to speak. They are fond of singing, and are exceedingly playful, either when confined or when suffered to run about the house. With the liveliness and familiarity that they possess, it is said to be highly diverting to place them before a looking-glass, and observe their strange and whimsical gesticulations; sometimes they erect the feathers of their head, and hiss at the image; then lowering

* Latham..—Penn. Arct. Zool. i. 300. † Catesby. i. 13.

their crest, they set up their tail, quiver their wings, strike at it with their bills, &c. Whether taken young or old is of no consequence, for in either state they become immediately tame. It is very common to keep them in a cylindrical cage with bells, which they turn round in the same manner as Squirrels are often made to do in this country. When they have been confined in a cage for some years they are said to become perfectly white, and so stupid and inanimate as at last not to be able to feed themselves; this however, never happens when they are abroad.*

THE ICTERIC ORIOLE.†

The Icteric Oriole is a native of Carolina and Jamaica; and in size is somewhat less than a Blackbird. It feeds on Insects, for the purpose of killing which the Americans keep it in their houses. It hops about like the Magpie, and has also many other gestures of that Bird. Albin tells us, that in all its actions it resembles the Starling; and adds, that sometimes four or five of them will unite to attack a larger Bird, which, after they have killed, they eat in a very orderly manner, each chusing his part according to his valour. They are in a wild state, so fierce and bold as when disturbed to attack even man, but when introduced into our society they are said to be easily tamed.

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* Brickell. p. 190.

† SYNONYMS.—Oriolus Icterus. *Linn.*—Troupiale. *Buff.*—Banana Bird from Jamaica. *Albin.*—Large Banana Bird from Jamaica. *Browne.*—Yellow and Black-pie *Catesby.*—Icteric Orile. *Latham.*

Their nests are constructed in a cylindrical form, several on the same tree, and suspended from the very ends of the branches, where they wave freely in the air. In these situations they are far out of the reach of such animals as would otherwise destroy the young. Several of the other species construct their nests in a similar manner.

WEAVER ORIOLE.*

This is a species that is found in Senegal, and some other parts of Africa. Two females that were brought from thence, were kept together in a cage, where it was observed, that they entwined some of the stalks of the Pimpernel, with which they were fed, in the wires. As this seemed to shew a disposition for forming a nest, some rush stalks were put into the cage; on which they presently made a nest large enough to hide one of them; but it was as often deranged as made, the work of one day being spoiled the next. This seemed to prove that the fabrication of the nest in a state of nature, was the work of both male and female, and that the female is not able to finish this important work by herself.

A Bird of this species having by accident got a bit of sewing silk, it wove it among the wires of its cage; on which, more being put to it, it interlaced the whole very confusedly, so as to prevent most part of that side of the cage from being seen through. It was found to prefer green and yellow silks to that of any other colour.

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* Synonyms.—Oriolus Textor, *Linn.*—Cap-more. *Buff.*—Weave Oriole.—*Latham.*

THE GRACKLE TRIBE.

These are birds confined principally to the hot climates, and never found in Europe. They live on fruits, seeds, and insects, and in their manners very much resemble the Orioles. Their bill is thick, compressed at the sides, convex, sharp-edged, and naked at the base. The tongue is entire, somewhat pointed and fleshy. The feet are formed for walking, with three toes forward, the outer of which is connected at the base to the middle one.

PURPLE GRACKLE*.

The Purple Grackle has a black bill: its head and neck are black, glossed over with a most resplendent blue, which varies with the light. The back and belly are also black, mixed with green and copper-colour. The legs are black, and the wings and tail of a rich purple. The weight is about twelve ounces.

It is a migratory bird, and found in most parts of America. It associates with the Red-winged Oriole in ravaging the plantations of maize, and these they attack together in myriads. In New England a reward was offered of three-pence a dozen for their heads, and the inhabitants soon found, to their own

* Synonyms.—Gracula quiscala. *Linn.*—Pie de la Jamaique. *Buff.*—Purple Jackdaw. *Catesby.*—Barbadoes Black bird. *Browne's Jamaica.*—Maisdieb. *Kalm.*—Purple Grackle. *Latham.*

cost, that they had at one time nearly extirpated them; for they then discovered that Providence had not formed even these seemingly destructive birds in vain. It was true that they made dreadful havoc among the grain, but they amply recompensed the injury by clearing the ground of the larvæ of noxious insects. As soon as the birds were destroyed, the insects increased in such multitudes, as, in the year 1749, to cause a total loss of the grass; and the inhabitants were, in consequence, obliged to obtain hay for their cattle not only from Pennsylvania, but even from Great Britain *.

The Purple Grackles appear in New York and Philadelphia about the beginning of March. In trees and retired places they build a coarse nest, plastered at the bottom. In this they lay four or five pale blue eggs. When the breeding season is over they return with their young in flights that are frequently several miles in length, darkening the sky as they pass along. It is in these flocks that they commit their depredations on the ripening maize: and they follow the cultivation of that plant even into countries where they were before unknown.

Their flesh is sometimes eaten; but it is hard, rank, and unpleasant †.

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* Penn. Arct. Zool. i. 308. † Catesby, i. 12.

THE BIRD OF PARADISE TRIBE.

THE Birds of Paradise have their bills slightly bending; the base covered with velvet-like feathers. The nostrils are small, and concealed by the feathers. The tail consists of ten feathers; the two middle ones of which in several of the species are very long, and webbed only at the base and tips. The legs and feet are very large and strong, having three toes forward and one backward; the middle one connected to the outer as far as the first joint.

This tribe has, till lately, been very imperfectly known, and of the manners of the individuals we are even yet almost entirely ignorant. No set of birds has given rise to more fables than this. From different writers we are taught to understand that they never touch the ground from the time of their exclusion from the egg to their death; that they live wholly on the *dew*; and are produced without legs: that when they sleep they hang themselves by the two long feathers of the tail to the branch of a tree: that the female produces her egg in the air, which the male receives in an orifice in his body, where it is hatched; and a thousand other stories, too ridiculous even to mention.

The whole race, as far as we are at present acquainted with it, are natives of New Guinea, from whence they migrate into the neighbouring isles. They are in general extremely brilliant in their colours.

THE GREATER BIRD OF PARADISE *.

There are two varieties of this species, both of which chiefly inhabit the islands of Arrou. They are supposed to breed in New Guinea, and to reside there during the wet monsoon; but they retire to the Arrou isles, about a hundred and forty miles eastward, during the dry or western monsoon.

They always migrate in flocks of thirty or forty, and have a leader which the inhabitants of Arrou call the king: he is said to be black, to have red spots, and to fly far above the flock, which never desert him, but settle in the same place that he does. They never fly with the wind, as in that case their loose plumage would be ruffled, and blown over their heads; and a change of wind often forces them to alight on the ground, from which they cannot rise without great difficulty. When they are surprised by a heavy gale, they instantly soar to a higher region, beyond the reach of the tempest; there, in a serene sky, they float at ease on their light flowing feathers, or pursue their journey in security. During their flight they cry like starlings, but when a storm blows in their rear they express their distressing situation by a note somewhat resembling the croaking of a raven. In calm weather great numbers of these birds may be seen flying,

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* Synonyms.—Paradisea apoda. *Linn.*—Oiseau de Paradis. Birds of Paradise. *Willughby.*—Greater Bird of Paradise. *Latham.*

both in companies and singly, in pursuit of the larger butterflies and other insects on which they feed.

They never willingly alight but on the highest trees, and they feed on fruits and the insect tribes.

Their arrival at Arrou is watched by the natives, who either shoot them with blunt arrows, or catch them with bird-lime or in nooses. When taken they make a vigorous resistance, and defend themselves stoutly with their bills. They are instantly killed, the entrails and breast bone are taken out, and they are then dried with smoke and sulphur for exportation to Banda, where they are sold for half a rix-dollar each. They are sent to all parts of India and to Persia, to adorn the turbans of persons of rank, and even the trappings of the horses. Not long ago they formed an additional ornament to the elegant head-dress of the British fair *.

THE CUCKOO TRIBE.

These birds have their bills weak, and more or less bending. The nostrils are bounded by a small rim; and the tongue is short, and pointed. The toes are placed two forwards and two backwards. The tail is wedge-shaped, and consists of ten soft feathers.

* Latham, ii. 471.—Shaw's Mus. Lev. 83.—Penn. Outlines, i. 149.—Forrest's Voyage to New Guinea.

The different species are scattered through the four quarters of the globe, but are much more usual in the hot than in temperate or cold climates. Only one of them is found in Great Britain, and not more than two or three are natives even of Europe.

THE COMMON CUCKOO*.

The Cuckoo visits us early in the spring. Its well-known cry is generally heard about the middle of April, and ceases about the latter end of June; its stay is short, the old Cuckoos being said to quit this country early in July. They are generally supposed to build no nest; and, what is also extraordinary, the female Cuckoo deposits her solitary egg in that of another bird, by whom it is hatched. The nest she chuses for this purpose is generally selected from the following; namely, those of the Hedge-sparrow, Water-wagtail, Titlark, Yellow-hammer, Green Linnet, or the Whinchat. Of these it has been observed that she shews much the greatest partiality to that of the Hedge-sparrow.

We owe the following account of the economy of this singular bird in the disposal of its egg, to the accurate observations of Mr. Edward Jenner, communicated to the Royal Society, and published in the second part of the lxxviii volume of their Transactions.

He observes that, during the time the Hedge-sparrow is laying her eggs, which generally takes up

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* Synonyms.—Cuculus canorus. *Linn.*—Coucou. *Buff.*—*Bew. Birds, p.* 104.—*Penn. Brit. Zool. vol. i. tab.* 36.

four or five days, the Cuckoo contrives to deposit her egg among the rest, leaving the future care of it entirely to the Hedge-sparrow. This intrusion often occasions some discomposure; for the old Hedge-sparrow at intervals, whilst she is sitting, not only throws out some of her own eggs, but sometimes injures them in such a way that they become addle, so that it frequently happens that not more than two or three of the parent bird's eggs are hatched; and, what is very remarkable, it has never been observed that the Hedge-sparrow has either thrown out or injured the egg of the Cuckoo. When the Hedge-sparrow has sat her usual time, and has disengaged the young Cuckoo, and some of her own offspring from the shell, her own young ones, and any of her eggs that remain unhatched, are soon turned out: the young Cuckoo then remains in full possession of the nest, and is the sole object of the future care of the foster parent. The young birds are not previously killed, nor the eggs demolished, but are left to perish together, either entangled in the bush which contains the nest, or lying on the ground under it.—Mr. Jenner next proceeds to account for this seemingly unnatural circumstance; and as what he has advanced is the result of his own repeated observations, we shall give it nearly in his own words: "On the 18th of June, 1787, he examined a nest of a Hedge-sparrow, which then contained a Cuckoo's and three Hedge-sparrow's eggs. On inspecting it the day following, the bird had hatched; but the nest then contained only a young Cuckoo, and one young

Hedge-sparrow. The nest was placed so near the extremity of a hedge, that he could distinctly see what was going forward in it; and, to his great astonishment, saw the young Cuckoo, though so lately hatched, in the act of turning out the young Hedge-sparrow. The mode of accomplishing this was curious: the little animal, with the assistance of its rump and wings, contrived to get the bird upon its back, and, making a lodgment for its burthen by elevating its elbows, clambered backwards with it up the side of the nest till it reached the top; where resting for a moment, it threw off its load with a jerk, and quite disengaged it from the nest. After remaining a short time in this situation, and feeling about with the extremities of its wings, as if to be convinced that the business was properly executed, it dropped into the nest again. Mr. J. made several experiments in different nests, by repeatedly putting in an egg to the young Cuckoo, which he always found to be disposed of in the same manner. It is very remarkable that nature seems to have provided for the singular disposition of the Cuckoo, in its formation at this period; for, different from other newly-hatched birds, its back, from the scapulæ downward, is very broad, with a considerable depression in the middle, which seems intended by nature for the purpose of giving a more secure lodgment to the egg of the Hedge-sparrow or its young one, while the young Cuckoo is employed in removing either of them from the nest. When it is above twelve days old, this cavity is quite filled up, the back assumes the shape of that of nestling birds

in general, and at that time the disposition for turning out its companion entirely ceases. The smallness of the Cuckoo's egg, which in general is less than that of the House-sparrow, is another circumstance to be attended to in this surprising transaction, and seems to account for the parent Cuckoo's depositing it in the nests of such small birds only as have been mentioned. If she were to do this in the nest of a bird that produced a larger egg, and consequently a larger nestling, the design would probably be frustrated; the young Cuckoo would be unequal to the task of becoming sole possessor of the nest, and might fall a sacrifice to the superior strength of its partners."

Mr. Jenner observes, that it sometimes happens that two Cuckoos eggs are deposited in the same nest, and gives the following instance which fell under his observation. Two Cuckoos and a Hedge-sparrow were hatched in the same nest; one Hedge-sparrow's egg remained unhatched. In a few hours a contest began between the Cuckoos for possession of the nest, which continued undetermined till the afternoon of the following day, when one of them, which was somewhat superior in size, turned out the other, together with the young Hedge-sparrow and the unhatched egg. This contest, he adds, was very remarkable: the combatants alternately appeared to have the advantage, as each carried the other several times nearly to the top of the nest, and again sank down oppressed by the weight of its burthen; till at length, after various efforts, the strongest prevailed,

and was afterwards brought up by the Hedge-sparrows."

There is certainly no reason to be assigned from the formation of this bird, why, in common with others, it should not build a nest, incubate its eggs, and rear its own young; for it is in every respect perfectly formed for all these offices. To what cause then may we attribute the above singularities? May they not be owing to the following circumstances? The short residence this bird is allowed to make in the country where it is destined to propagate its species, and the call that nature has upon it during that short residence to produce a numerous progeny. The Cuckoo's first appearance here is about the middle of April: its egg is not ready for incubation till some weeks after its arrival, seldom before the middle of May. A fortnight is taken up by the sitting bird in hatching the egg. The young bird generally continues three weeks in the nest before it flies, and the foster-parents feed it more than five weeks after this period; so that if a Cuckoo should be ready with an egg much sooner than the time pointed out, not a single nestling, even one of the earliest, would be fit to provide for itself before its parent would be instinctively directed to seek a new residence, and be thus compelled to abandon its offspring; for the old birds take their final leave of this country the first week in July.

"There seems (says Mr. Jenner) no precise time fixed for the departure of young Cuckoos. I believe they go off in succession, probably as soon as they

are capable of taking care of themselves; for although they stay here till they become nearly equal in size, and in growth of plumage, to the old Cuckoo, yet in this very state the fostering care of the Hedge-sparrow is not withdrawn from them. I have frequently seen the young Cuckoo of such a size that the Hedge-sparrow has perched on its back, or half-expanded wing, in order to gain sufficient elevation to put the food into its mouth. At this advanced age it is probable that the young Cuckoos procure some food for themselves; like the young rook, for instance, which in part feeds itself, and is partly fed by the old ones till the approach of the pairing season."

The same instinctive impulse which directs the Cuckoo to deposit her eggs in the nests of other birds, directs her young one to throw out the eggs and young of the owner of the nest. The scheme of nature would be incomplete without it; for it would be extremely difficult, if not impossible, for the little birds destined to find succour for the Cuckoo, to find it also for their own young ones after a certain period; nor would there be room for the whole to inhabit the nest.

The above are certainly well-attested instances of the Cuckoo's laying its eggs in the nests, and trusting its young to the protection of other birds; yet we have also instances, equally well attested, of their hatching and feeding their own nestlings:

The Rev. Mr. Stafford was one day walking in Blossop-dale, in Derbyshire, and saw a Cuckoo rise from its nest, which was on the stump of a tree that

had been some time felled, so as almost to resemble the colour of the bird. In this nest were two young Cuckoos, one of which he fastened to the ground by means of a peg and line; and very frequently, for many days, beheld the old Cuckoo feed them.

Mr. Daines Barrington, who recorded this account, was also furnished with two other instances of Cuckoos' nests, and the proper parents feeding their young; the one within four miles of London, and the other on the south-west coast of Merionethshire. When at a friend's house in Herefordshire, a girl brought to him a young Cuckoo which she had taken from a nest; and on his asking what sort of a bird it was fed by, the girl answered, By such another, only somewhat larger.

It has been conjectured by some that the Cuckoo remains in this country hidden in hollow trees, and in a torpid state, during the winter. In support of this opinion Willughby, on the credit of another person, relates the following story: "The servants of a gentleman in the country, having stocked up, in one of the meadows, some old, dry, rotten willows, thought proper, on a certain occasion, to carry them home. In heating a stove, two logs of this timber were put into the fire beneath, and fire was applied as usual. But soon, to the great surprise of the family, was heard the voice of a Cuckoo, singing three times from under the stove. Wondering at so extraordinary a cry in winter time, the servants drew the willow logs from the furnace, and in the midst of one of them saw something move;

wherefore, taking an ax, they opened the hole, and, thrusting in their hands, first they plucked out nothing but feathers; afterwards they got hold of a living animal, and this was the Cuckoo that had waked so very opportunely for its own safety. It was, indeed (continues our historian), brisk and lively, but wholly naked and bare of feathers, and without any winter provision in its hole. This Cuckoo the boys kept two years afterwards alive in the stove; but whether it repaid them with a second song, the author of the tale has not thought fit to inform us*".

A few years ago a young Cuckoo was found in a torpid state, in the thickest part of a close furze-bush: when taken up it soon discovered signs of life, but was quite destitute of feathers: being kept warm, and carefully fed, it grew and recovered its coat. In the spring following it made its escape, and in flying across the river Tyne was heard to give its usual call†.

It would be wrong to assert as a general fact that the Cuckoos remain torpid in this country during the winter, because half a dozen, or perhaps not so many, instances have been recorded of their having been found in this state. We are led much rather to suppose that these accidental occurrences have arisen probably from their being young birds that had not been strong enough to leave us at the usual time of migration, and had therefore sought for

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* Willughby, 93. † Introduction to Bewick's Birds, p. xvii.

shelter and warmth in the places where they have been discovered.

It is supposed that there are more male Cuckoos than females: Mr. Pennant observed that five male birds were caught in a trap in one season; and Dr. Latham says, that out of at least half a dozen that he attended to, chance never directed him to a female. The males alone being vocal may, however, be one cause why our specimens are chiefly of this sex, their note directing the gunner to take aim, while the female is secured by her silence.

The young birds, though helpless and foolish for a great length of time, may be, and often are, brought up tame, so as to become familiar. In this state they will eat bread and milk, fruits, insects, eggs, and flesh either cooked or raw; but in a state of nature they are supposed to live principally on caterpillars. When fat, they are said to be as good eating as the Land Rail*.

THE BEE CUCKOO OR MOROC†.

The Bee Cuckoo, in its external appearance, does not much differ from the common sparrow; except that it is somewhat larger, and rather of a lighter colour: it has also a yellow spot on each shoulder, and the feathers of its tail are dashed with white.

This bird is peculiar for its faculty of discovering and pointing out to man, and to the animal

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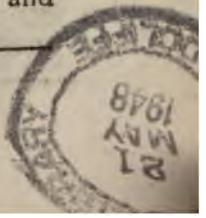
* Latham.—Penn. Brit. Zool. i. 232.

† Synonyms.—Cuculus indicator. *Linn.*——Coucou indicateur. *Buff.*—Honey Guide. Moroç. *Sparrman.*

called the Ratel *, the nests of wild bees. It is itself exceedingly fond both of honey and the bee-maggots; and it knows that, when a nest is plundered, some of it must fall to the ground, which consequently falls to its share: but, in general, some part is purposely left by the plunderers as a reward for its services. The way in which this bird communicates to others the discovery it has made, is as surprising as it is well adapted to the purpose.

The morning and evening are its principal meal times; at least it is then that it shews the greatest inclination to come forth, and with a grating cry of *cherr, cherr, cherr,* to excite the attention of the Ratel, as well as of the Hottentots and Colonists, of whose country it is a native. Somebody then generally repairs to the place whence the sound proceeds; when the bird, all the while continually repeating its cry of *cherr, cherr, cherr,* flies on slowly and by degrees towards the quarter where the swarm of bees have taken up their abode. The persons thus invited accordingly follow, taking great care at the same time not to frighten their guide by any unusual noise, but rather to answer it now and then with a soft and very gentle whistle, by way of letting the bird know that its call is attended to. When the bees-nest is at some distance, the bird often makes long stages or flights, waiting for its sporting companions between each flight, and calling to them again to come on; but it flies to shorter distances, and repeats its cry more frequently and

* Viverra mellivora of Linnæus.



with greater earnestness, in proportion as they approach nearer the nest. When the bird has sometimes, in consequence of its great impatience, got too far a-head of its followers, but particularly when, on account of the unevenness of the ground, its followers have not been able to keep pace with it, it has flown back to meet them, and with redoubled cries, denoting still greater impatience, has upbraided them for being so tardy. When it comes to the bees-nest, whether it be built in the cleft of a rock, or in a hollow tree, or in some cavity of the earth, it hovers over the spot for the space of a few seconds (a circumstance to which Dr. Sparrman was twice eye-witness); after which it sits in silence, and for the most part concealed, in some neighbouring tree or bush, in expectation of what may happen, and with a view of coming in for its share of the booty. It is probable that this bird always hovers more or less, in the manner just mentioned, over the bees-nest, before it hides itself, though the people do not always pay attention to this circumstance: at all events, however, one may be assured that the bees-nest is very near, when, after the bird has guided its followers to some distance, it is on a sudden silent.

Having, in consequence of the bird's directions, found and plundered the nest, they usually, by way of acknowledgment, leave it a considerable portion of that part of the comb in which the young bees are hatching; which is probably to the bird the most delicate morsel*.

* Sparrman's Voyages to the Cape.

This account of Sparrman has met with severe though somewhat ill-natured animadversions from the pen of Mr. Bruce. We shall insert them in his own words. "I cannot," he says, "for my own part conceive, in a country where there are so many thousand hives, that there was any use for giving to a bird a peculiar instinct or faculty of discovering honey, when, at the same time, nature hath deprived him of the power of availing himself of any advantage from the discovery; for man seems in this case to be made for the service of the Moroc, which is very different from the common and ordinary course of things: man certainly needs him not; for on every tree, and on every hillock, he may see plenty of honey at his own deliberate disposal. I cannot then but think, with all submission to these natural philosophers, (Dr. Sparrman, and Jerome Lobo, who has also given an account of this bird,) that the whole of this is an improbable fiction: nor did I ever hear a single person in Abyssinia suggest, that either this or any other bird had such a property. Sparrman says it was not known to any inhabitant of the Cape, any more than that of the Moroc was in Abyssinia; it was a secret of nature hid from all but these two great men, and I most willingly leave it among the catalogue of their particular discoveries."

Dr. Sparrman says, that a nest which was shown to him for that of this bird was composed of slender filaments of bark, woven together in the form of a bottle; the neck and opening hung downwards, and a string in an arched shape was suspended across the

opening, fastened by the two ends, perhaps for the bird to perch on.

Mr. Barrow, who in the years 1797 and 1798 travelled into the interior of the southern extremity of Africa, fully confirms the truth of Dr. Sparrman's account. He says, that every one there is too well acquainted with the Moroc to have any doubts as to the certainty either respecting the bird or its information of the repositaries of the bees. He tells us further, that it indicates to the inhabitants with equal certainty the dens of lions, tigers, hyænas, and other beasts of prey and noxious animals. M. Le Vaillant says that the Hottentots are very partial to the Moroc on account of the service it renders them, and that once when he was about to shoot one, they on that account begged him to spare its life*.

THE WRYNECK†.

The bill of the Wryneck is roundish, slightly curved and weak. The nostrils are bare of feathers, and somewhat concave. The tongue is long, slender, and armed at the point. There are ten flexible feathers in the tail; and the feet are formed for climbing, the toes being placed two backward and two forward.

This bird (for there is only a single species of the

* Travels in Africa, i. 116.

† Synonyms.—Yunx torquilla. *Linn.* — Torcol. *Buff.*— Barley Bird, in several parts of England.——*Bew. Birds, p.* 111. ——*Penn. Brit. Zool. vol. i. tab.* 36.

tribe) is well known in most parts of England. In the form of its tongue and toes it resembles the woodpeckers, but the weakness of the bill prevents its being arranged with that tribe.

It boasts but few colours, its plumage consisting principally of different shades of brown; but these are so beautifully blended together, as, on the whole, to give it a very elegant appearance. It is about the size of a lark. The bill is three quarters of an inch long, and of a pale lead colour: the tongue, when extended, appears shaped like a worm. A list of black and rusty strokes divides the top of the head and the back: the sides of the head and neck are ash-coloured, beautifully traversed with fine lines of black and reddish brown. The quill-feathers are dusky, but each web is marked with rust-coloured spots. The chin and breast are of a light yellowish brown, adorned with sharp-pointed bars of black. The tail consists of ten weak feathers, broad at their ends, of a pale ash-colour, marked with black and red, and having four equi-distant bars of black.—The female is of a paler colour than the male.

The Wryneck builds in holes in trees an artless nest, in which eight or ten perfectly white eggs are deposited. Dr. Derham tells us, that although these birds are far from being any way terrible, yet when in danger they have such singular contortions of their neck, and such odd motions with their head, that, when he was a boy, he used to be so much alarmed at them that he was entirely deterred from either taking their nests or touching the birds, daring no

more to venture his hand into their holes, than if a serpent had lodged in them*. The young ones while in the nest will also hiss like so many snakes; which may afford an additional preventative against the nest being plundered.

Their food consists principally of ants and other insects, of which they find great abundance lodged in the bark and crevices of trees. They also frequent grass plots and ant-hills; into which they dart their tongues, and from whence they draw out their prey. Mr. White, in his Naturalist's Calendar, tells us that these are so long as to coil round their heads.

The manners of this species were minutely examined by taking a female from her nest, and confining her in a cage for some days. A quantity of mould, with ants and their grubs, was given to her; and it was curious to observe the tongue darted forward and retracted, with such velocity, and such unerring aim, that it never returned without either an ant or a grub adhering to its viscous extremity, not transfixed by it as is generally supposed. While feeding the body was altogether motionless; the head only being turned; and the motion of the tongue was so rapid that the grubs, which are of a light colour, and were more conspicuous than the tongue, had somewhat the appearance of moving to the mouth by attraction, as a small particle of iron flies to a magnet. The bill was rarely used except to remove the mould in order to get more readily at the insects. Where the earth

* Physico-Theology.

was hollow the tongue was thrust into the cavities to rouse the ants : for this purpose the horny extremity is very serviceable, as a guide to it into the interior*.

The Wryneck is a solitary bird, never being seen in any other society than in that of its own mate : and even this is only transitory; for as soon as the domestic union is dissolved, which is in the month of September, each retires and migrates by itself, and does not return till the ensuing spring. The voice of these birds is very much like that of the smaller species of hawks. They also sometimes make a noise like a grashopper.

THE WOODPECKER TRIBE.

The Woodpeckers are a very singular race of birds, that live almost entirely on insects, which they pick out of decayed trees and from the bark of such as are sound. These they transfix and draw out of their crevices by means of the tongue, which is bony at the end, barbed, and furnished with a curious apparatus of muscles for the purpose of throwing it forwards with great force. Their bill is also so strong and powerful, that by means of it they are able to perforate even such trees as are perfectly sound : in the holes they thus make their nests are constructed. Their voice is very acute and unpleasant.

* Montagu, art. Wryneck.

The bill is straight, strong, angular, and the end, in most of the species, formed like a wedge, for the piercing of trees. The nostrils are covered with bristles. The tongue is very long, slender, cylindrical, bony, hard and jagged at the end. The toes are placed two forward and two backward; and the tail consists of ten hard, stiff, and sharp-pointed feathers.

THE BLACK WOODPECKER*.

This Woodpecker weighs about eleven ounces. Its plumage is black, except the crown of the head, which is of a rich crimson. The head of the female is only marked with red behind.

It inhabits Switzerland, Germany, and several of the northern regions, and is migratory. It is sometimes, but very rarely, found in this country.

This bird lives on insects, which it catches on the bark of trees, or betwixt the bark and wood. It darts out its long tongue, sometimes three or four inches beyond the bill, spits the insects on the end, and then with a very quick motion retracts it and swallows them. The feathers of the tail are very stiff, and so firmly set into the rump, that when the bird has fastened its claws into the inequalities of the bark, he places his strong tail feathers against it, and thus, standing as it were erect, forms a hole by means of its bill. It is able to pierce not only sound but hard trees, as the oak and

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* Synonyms.—Picus Martius. *Linn.*—Pic Noir. *Buff.*—Greatest Black Woodpecker. *Penn.*

hornbeam. This hole is enlarged within for the greater convenience of depositing its nest. The damage it does to timber by this means is very great*.

The female lays two or three white eggs. This bird has a very loud note, and feeds on caterpillars and insects.

THE WHITE-BILLED WOODPECKER†.

This bird is about the size of a crow. The bill is white, three inches long and channelled. On the head is a red pointed crest; the head itself and the body in general are black; but the lower part of the back, the rump and upper tail-coverts are white. From the eye a white stripe arises, and passes on each side of the neck down to the back.

It is found in Carolina, Virginia, and various parts of South America, where the Spanish settlers have given it the name of Carpenter, from the noise that it makes with its bill against the trees in the woods. This is heard at a very great distance; and when several of them are at work together, the sound is not much unlike that proceeding from woodmen or carpenters. It rattles its bill against the sides of the orifice till even the woods resound. A bushel of chips, a proof of its labours, is often to be found at the foot of the tree. On examination their holes have been generally found of a winding form, the

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* Phil. Tran. vol. xxix. p. 509.

† Synonyms.—Picus principalis. *Linn.*—Grand Pic Noir à bec blanc. *Buff.*—Largest White-billed Woodpecker. *Catesby.*—White-billed Woodpecker. *Latham.*

better to protect their nest from the effects of the weather.

Catesby, from whose work the above account has been principally taken, says likewise that the Canadian Indians make a kind of coronets with the bills of these birds, by setting them in a wreath with the points outwards; and that for this purpose they would purchase them at the rate of two or three buck-skins per bill*.

THE RED-HEADED WOODPECKER†.

The present species is about nine inches long; with a bill about an inch and a quarter, of a lead colour with a black tip. The head and neck are of a most beautiful crimson; the back and wings black; the rump, breast and belly white; and the first ten quills black, the eleventh black and white, and the rest white with black shafts. It inhabits Carolina, Canada, and most other parts of North America, migrating southwards according to the severity of the weather.

According to Kalm the Red-headed Woodpeckers are very common birds, and exceedingly destructive to the maize-fields and orchards, picking the ears of maize, and destroying vast quantities of apples. They attack the trees in flocks, and eat so much of the fruit that nothing but the skin is left. In some years they are much more numerous than others. A pre-

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* Catesby, i. 16.

† Synonyms.—Picus Erythrocephalus. *Linn.*——Pic de Virginie. *Buff.*—Red-headed Woodpecker. *Latham.*

mium of twopence per head was formerly paid from the public funds of some of the States, in order, if possible, to extirpate the breed: but this has been much neglected of late.

They remain the whole year in Virginia and Carolina, but are by no means in such numbers in winter as during summer. In the winter they are very tame, and are frequently known to come into the houses in the same manner as the redbreast does in England.

They build, like the other species, in holes that they form in the trees, but generally pretty high from the ground. It is said that the noise they make with their bills in this operation may be heard more than a mile. Their flesh is by many people accounted good eating.

THE NUTHATCH TRIBE.

The characters of this tribe are, a bill for the most part straight, having on the lower mandible a small angle: small nostrils covered with bristles: a short tongue, horny at the end and jagged: toes placed three forward and one backward; the middle toe joined closely at the base to both the outer ones; and the back toe as large as the middle one.

In the manners of the different species, which very nearly correspond with those of the following,

the only one found in England, we observe a considerable alliance to the woodpeckers. Most of them feed on insects, and some on nuts; from whence their English name was derived.

THE EUROPEAN NUTHATCH*.

The length of this bird is five inches and three quarters. The bill is strong and straight, about three quarters of an inch long; the upper mandible black, and the lower white. All the upper parts of the body are of a blueish grey: the cheeks and chin are white; the breast and belly pale orange coloured; and the quills dusky. The tail is short, and consists of twelve feathers, the two middle ones of which are grey, the two outer spotted with white, and the rest dusky. The legs are pale yellow; the claws are large, and the back one very strong.

It is a shy and solitary bird, and, like the woodpecker, frequents the woods and runs up and down the trees.—It often moves its tail like the wagtail.

The Nuthatch, the squirrel, and the field-mouse, which live much on hazel-nuts, have each a very pleasing way of getting at the kernel. Of the two latter, the squirrel, after rasping off the small end, splits the shell in two with his long fore-teeth, as a man does with his knife; the field-mouse nibbles a hole with his teeth, as regular as if drilled with a

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* Synonyms.—Sitta Europea. *Linn.*—Sittlelle ou Torchepot. *Buff.*—Nuthatch or Nut-jobber. *Willughby.*—Woodcracker. *Plott.*—Nutbreaker. *Albin.*—European Nuthatch. *Latham.*——*Bew. Birds, p.* 121.——*Penn. Brit. Zool. vol.* i. *p.* 38.

whimble, and yet so small that one would wonder how the kernel could be extracted through it; while the *Nuthatch* picks an irregular ragged hole with his bill: but, as this artist has no paws to hold the nut firm while he pierces it, like an adroit workman he fixes it as it were in a vice, in some cleft of a tree, or in some crevice; when, standing over it, he perforates the stubborn shell. On placing nuts in the chink of a gate-post where Nuthatches have been known to haunt, it has always been found that those birds have readily penetrated them. While at work they make a rapping noise that may be heard at a considerable distance. Dr. Plott informs us that this bird, by putting its bill into a crack in the bough of a tree, sometimes makes a violent sound as if the branch was rending asunder. Besides nuts it feeds on caterpillars, beetles, and various other insects.

The female deposits her eggs, six or seven in number, in some hole of a tree, frequently in one that has been deserted by the woodpecker, on rotten wood mixed with moss. If the entrance be too large, she nicely stops up part of it with clay, leaving only a small hole for herself to pass in and out by. While the hen is sitting, if a stick is put into the hole she hisses like a snake, and she is so much attached to her eggs that she will sooner suffer any one to pluck off her feathers than fly away. During the time of incubation she is assiduously attended by the male, who supplies her with food. If the barrier of plaster at the entrance of the hole is destroyed while these birds have eggs, it is speedily replaced;

a peculiar instinct, to prevent their nest from being destroyed by the woodpecker and other birds of superior size and strength which build in similar situations*.

The Nuthatch is supposed not to sleep perched (like most other birds) on a twig; for it has been observed, that when kept in a cage, notwithstanding it would perch now and then, yet at night, if possible, it generally crept into some hole or corner to sleep; and it is remarkable, that when perched, or otherwise at rest, it had mostly the head downwards, or at least even with the body, and not elevated like other birds.

It does not migrate, but in winter approaches nearer inhabited places, and is sometimes seen in orchards and gardens.—The young ones are accounted very good eating.

THE KINGFISHER TRIBE.

These birds frequent the banks of rivers, living principally on fish, which they catch with great dexterity. They swallow their prey whole, but afterwards bring up the indigestible parts. Their wings are short, yet they fly very swiftly.

The bill is triangular, long, unbent, thick and sharp. The tongue is fleshy, short, flat, and acute.

* Montagu, art, Nuthatch.

The feet, except in a few species, are formed for climbing, with the toes two backward and two forward.

THE COMMON KINGFISHER *.

This is the most beautiful of all the British birds. Its length is seven inches, and breadth eleven. The bill is near two inches long, and black; but the base of the lower mandible is yellow. The top of the head and the sides of the body are of a dark green, marked with transverse spots of blue. The tail is of a deep blue, and the other parts of the body are dusky orange, white and black. The legs are red.

This bird is found throughout Europe, where it preys on the smaller fish. It sits frequently on a branch projecting over the current; there it remains motionless, and often watches whole hours to catch the moment when a little fish springs under its station; it dives perpendicularly into the water, where it continues several seconds, and then brings up the fish, which it carries to land, beats to death, and then swallows.

When the Kingfisher cannot find a projecting bough, it sits on some stone near the brink, or even on the gravel; but the moment it perceives the fish, it takes a spring of twelve or fifteen feet, and drops perpendicularly from that height. Often it is observed to stop short in its rapid course and remain stationary, hovering (in manner not unlike some of

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* Synonyms.—Alcedo hispida. *Linn.*—Martin-pêcheur ou Alcyon. *Buff.*—European Kingfisher. *Penn.*—Common Kingfisher. *Latham.*——*Penn. Brit. Zool. vol. i. tab.* 38.

the hawk tribe) over the same spot for several seconds. Such is its mode in winter, when the muddy swell of the stream or the thickness of the ice constrains it to leave the rivers, and ply along the sides of the unfrozen brooks. At each pause it continues, as itwere, suspended at the height of fifteen or twenty feet; and, when it would change its place, it sinks and skims along within a foot of the surface of the water; then rises and halts again. This repeated and almost continual exercise shews that the bird dives for many small objects, fishes or insects, and often in vain; for in this way it passes over many a league.

"The Kingfishers," says M. Gmelin, "are seen all over Siberia, and their feathers are employed by the Tartars and the Ostiacs for many superstitious uses. The former pluck them, cast them into water, and carefully preserve such as float; and they pretend, that if with one of these feathers they touch a woman, or even her clothes, she must fall in love with them. The Ostiacs take the skin, the bill and the claws of this bird, and shut them in a purse; and as long as they preserve this sort of amulet they believe that they have no ill to fear. The person who taught me this mean of living happy could not forbear shedding tears; he told me that the loss of such a skin that he had, caused him to lose also his wife and his goods. I told him that such a bird could not be very rare, since a countryman of his had brought me one, with its skin and feathers: he was much surprised, and said that if he had the luck to find one he would give it to no person*."

* Voyage en Sibérie, par M. Gmelin, quoted in Buffon's Birds.

M. D'Aubenton kept these birds for several months by means of small fish put into basons of water, on which they fed; for, on experiment, they refused all other kinds of nourishment.

The Kingfisher lays its eggs, to the number of seven or more, in a hole in the bank of the river or stream that it frequents. Dr. Heysham had a female brought alive to him at Carlisle, by a boy who said he had taken it the preceding night when sitting on her eggs. His information on the subject was, that "having often observed these birds frequent a bank upon the river Peteril, he had watched them carefully, and at last saw them go into a small hole in the bank. The hole was too strait to admit his hand, but as it was made in soft mould he easily enlarged it. It was upwards of half a yard long: at the end of it the eggs, which were six in number, were placed upon the bare mould, without the smallest appearance of a nest." The eggs were considerably larger than those of the yellow-hammer, and of a transparent white colour *. It appears from a still later account than this, that the direction of the holes is always upward, that they are enlarged at the end, and have there a kind of bedding formed of the bones of small fish, and some other substances, evidently the castings of the parent animals. This is generally about half an inch thick, and mixed in with the earth. There is every reason to believe that both male and female come to this spot for no other purpose than to eject the refuse of their food, for some

* Heysham in Hutchinson's Cumberland, vol. i. p. 9.

time before the latter begins to lay; and that they dry it by the heat of their bodies, as they are frequently known to continue in the hole for hours, long before they have eggs. On this disgorged matter the female lays and hatches her eggs. When the young are nearly full-feathered they are extremely voracious; and the old birds not supplying them with all the food they could devour, they are continually chirping, and may be discovered by their noise.

It was once believed that, when the body of a Kingfisher was suspended by a thread, some magnetic influence always turned its breast to the north. This, however, is as fabulous as that it will preserve woollen cloth from the depredations of moths *.

THE CREEPER TRIBE.

The Creepers are dispersed through most countries of the globe. They feed chiefly on insects, in search of which they run up and down the stems and branches of trees. Most of the species breed in hollows of trees, where they lay many eggs.

Their bill is much curved, slender and pointed. The tongue is generally acute, (though sometimes flat,) fringed or tubular. The legs are strong, and formed with three toes forward.

* Montagu, art. Kingfisher.

THE COMMON CREEPER *.

There is only one of the British birds smaller than the present, its weight being no more than five drams. The length of its feathers, and the manner that it has of ruffling them, give it however an appearance of size that it is by no means entitled to. Its bill is hooked; and its legs slender, with the claws very long, to enable it to creep up and down the bodies of trees in search of insects. Its colour is a mixed grey, with the under parts white. The quill feathers of the wings are brown, and several of them are tipped with white. The tail is long, and consists of twelve stiff feathers. It is found both in Europe and Asia, and is very common in some parts of North America, particularly in the neighbourhood of Philadelphia.

This little bird seems peculiarly fond of the society of man, and it must be confessed that in some parts of the world it is often protected by his interested care. From observing its utility in destroying insects, it has long been a custom, in many parts of the United States, to fix a small box at the end of a long pole, in gardens and about houses, as a place for it to build in. In these boxes the animals form their nest and hatch their young, which the parent birds feed with a variety of different insects, particularly those species that are injurious in gardens. A gentleman who was at the trouble of watching

* Synonyms.—Certhia familiaris. *Linn.*—Grimpereau. *Briss.*—Ox-eye Creeper. *Charlton.*—*Bew. Birds, p.* 125. ——*Penn. Brit. Zool. vol. i. tab.* 39.

these birds for the purpose, observed that the parents generally went from the nest and returned with insects from forty to sixty times in an hour, and that in one particular hour they carried food no fewer than seventy-one times. In this business they were engaged during the greatest part of the day. Supposing twelve hours to be occupied in it, a single pair of these birds would destroy at least six hundred insects in the course of one day, on the supposition that the two birds only took a single insect each time. But it is highly probable that they often took more *.

We suspect it is this bird that Mr. St. John has called a *Wren*, recording the following story of its bravery and selfishness. Three birds had built their nests almost contiguous to each other. A swallow had affixed hers in the corner of the piazza next his house; a bird he calls a Phebe in the other corner; and a Wren possessed a little box which he had made on purpose and hung between. These were all quite tame. The Wren had for some time shown signs of dislike to the box which had been given to it, though it was not known on what account. At length, however, it resolved, small as it was, to drive the Swallow from its habitation, and, astonishing to say it, succeeded. "Impudence," says Mr. St. John, "gets the better of modesty; and this exploit was no sooner performed than it removed every material to its own box with the most ad-

* Barton's Fragments of the Natural History of Pennsylvania, p. 22.

mirable dexterity. The signs of triumph appeared very visible; it fluttered its wings with uncommon velocity; and an universal joy was perceivable in all its movements. The peaceable Swallow, like the passive Quaker, meekly sat at a small distance, and never offered the least resistance. But no sooner was the plunder carried away, than the injured bird went to work with unabated ardour, and in a few days the depredations were repaired." Mr. St. John, to prevent any repetition of the same violence, removed the Wren's box to another part of the house *.

In America the Creeper hatches twice during the summer, and has generally from eighteen to twenty eggs at a time.

THE RED CREEPER†.

This diminutive inhabitant of New Spain, smaller even than the last species, we mention merely for the purpose of describing its nest, which is, unlike those of most of the others, pensile.

It is formed not unlike a chemist's retort with the mouth downwards, through which the bird ascends to its offspring placed in the bulb at the top, Its length is fourteen or sixteen inches, and it is suspended to the most extreme and tender branches of the trees by means of a kind of woven work of the same materials as the exterior of the nest. In the broadest part of the bulb it measures about six

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* Letters of an American Farmer, p. 40.

† Synonyms.—Certhia Mexicana. *Linn.*—Oiseau rouge à bec de Grimpereau. *Buff.*

inches in diameter. Within, it is lined with extremely soft and downy materials to guard the bodies of the tender young from injury; and it is altogether so very light as to be driven about by the most gentle breeze *.

THE HUMMING BIRD TRIBE.

The Humming Birds are the least of all the feathered tribe. They are natives of the warmer parts of America, and of some of the West-India islands, and bear a great resemblance to each other in manners. Their principal food is the nectar at the bottom of the tubular flowers, which they extract, like bees, while on the wing, by means of their long and slender bill. Their name is derived from the humming noise they make with their wings, which is even louder than their voice. They are gregarious, and construct an elegant hemispherical nest, in which they lay two small white eggs that are hatched by the sitting of the male and female alternately. The young are often attacked and devoured by spiders.—These birds may be taken by blowing water upon them from a tube, for the finest shot in the world would blow them to pieces.—Small as they

* Seba, p. 70. t. 42.—p. 106. t. 68.

are, they are extremely bold and pugnacious; and their flight is very rapid. Their colours are too brilliant to be expressed by any pencil.

The characters of the tribe are, a slender weak bill, incurvated in some species, in others straight: the nostrils minute: the tongue very long, and formed of two conjoined cylindrical tubes: the legs weak: the toes placed three forward and one backward; and the tail consisting of ten feathers.

THE RED-THROATED HUMMING BIRD *.

The length of this diminutive creature is a little more than three inches; and that of its bill three quarters of an inch. The male is green gold on the upper part, with a changeable copper gloss; the under parts are grey. The throat and fore-part of the neck are of a ruby colour; in some lights as bright as fire. When viewed sideways the feathers appear mixed with gold, and beneath of a dull garnet colour. The two middle feathers of the tail are the same as the upper plumage, and the rest are brown.—The female, instead of the bright ruby throat, has only a few obscure small brown spots; and all the outer tail feathers, which in the male are plain, are in the female tipped with white. The bill and legs are black in both sexes.

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* Synonyms.—Trochilus colubris. *Linn.*—Rubis. *Buff.*—Humming Bird. *Catesby.*—Red-throated Honey-sucker. *Penn.*—Red throated Humming Bird. *Latham.*

This beautiful little creature is as admirable for its vast swiftness in the air, and its manner of feeding, as for the elegance and brilliancy of its colours.

It flies so swiftly that the eye is incapable of following; and the motion of its wings is so rapid as to be imperceptible to the nicest observer. Lightening is scarcely more transient than its flight, nor the glare more bright than its colours.

It never feeds but upon the wing, suspended over the flower it extracts nourishment from; for its only food is the honeyed juice lodged in the nectaria of the flowers, which it sucks through the tubes of its curious tongue. Like the bee, having exhausted the honey of one flower, it wanders to the next in search of new sweets. It admires most those flowers that have the deepest tubes; and in the countries which these diminutive birds inhabit, whoever sets plants of this description before their windows is sure to be visited by multitudes of them. It is very entertaining to see them swarming around the flowers, and trying every tube by putting in their bills. If they find that their brethren have been beforehand, and robbed the flower of its honey, they will, in a rage, (if possible) pluck it off, and throw it on the ground; sometimes they tear it in pieces.

The most violent passions animate at times their little bodies. They have often dreadful contests, when numbers happen to dispute the possession of the same flower. They will tilt against one another with such fury, as if they meant to transfix their antagonists with their long bills. During the fight,

they frequently pursue the conquered into the apartments of those houses whose windows are left open, take a turn round the room, as flies do in England, and then suddenly regain the open air. They are fearless of mankind; and in feeding will suffer persons to come within two yards of them; but on a nearer approach they dart away with wonderful swiftness. Mr. St. John says that their contentions often last till one or other of the combatants is killed.

This bird most frequently builds on the middle of a branch * of a tree, and the nest is so small, that it cannot be seen by a person who stands on the ground: any one, therefore, desirous of seeing it must get up to the branch, that he may view it from above: it is from this reason that the nests are not more frequently found. The nest is quite round; the outside for the most part composed of the green moss common on old pales and trees; and the inside of the softest vegetable down the birds can collect. Sometimes however they vary the texture, using flax, hemp, hairs, and other similar materials. The female lays two eggs of the size of a pea, which are white, and equal in thickness at both ends.

Ferdinandez Oviedo, an author of great repute, speaks from his own knowledge of the spirited in-

* This is not, however, always the case, as they are often known to take up with some low bush, or even a tobacco-stalk: the nests have been seen fixed to the side of a pod of Ocra, Hibiscus esculentus of Linnæus.

stinct even of these diminutive birds in defence of their young: "When they observe any one climbing the tree in which they have their nests, they attack him in the face, attempting to strike him in the eyes, and coming, going, and returning, with such swiftness, that a man would scarcely credit it who had not himself seen it*."

The Humming Bird is seldom caught alive; a friend of M. du Pratz had, however, this pleasure. He had observed one of them enter the bell of a Convolvulus; and as it had quite buried itself to get at the bottom, he ran immediately to the place, shut the flower, cut it from the stalk, and carried off the bird a prisoner. He could not, however, prevail upon it to eat, and it died in the course of three or four days†.

Charlevoix informs us that he had one of them in Canada for about twenty-four hours. It suffered itself to be handled, and even counterfeited death that it might escape. A slight frost in the night destroyed it‡.

"My friend captain Davies informs me," says Dr. Latham in his Synopsis, "that he kept these birds alive for four months by the following method:—he made an exact examination of some of the tubular flowers with paper, fastened round a tobacco-pipe, and painted them of a proper colour: these were placed in the order of nature, in the cage in

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* Penn. Arct. Zool. i. 336. † Du Pratz, p. 282.

‡ Charlevoix.

which the little creatures were confined: the bottoms of the tubes were filled with a mixture of brown sugar and water as often as emptied; and he had the pleasure of seeing them perform every action; for they soon grew familiar, and took their nourishment in the same manner as when ranging at large, though close under the eye *."

* Latham, i. 769.

THE STARE TRIBE*.

IN this tribe the bill is straight, and depressed: the nostrils are guarded above by a prominent rim: the tongue is hard and cloven; and the middle toe is connected to the outermost as far as the first joint.

THE WATER OUZEL†.

The Water Ouzel is in size somewhat less than the Blackbird. Its bill is black, and almost straight. The eye-lids are white. The upper parts of the head and neck are of a deep brown, and the rest of the upper parts, the belly, vent and tail are black. The chin, the fore part of the neck and breast, are white or yellowish. The legs are black.

It frequents the banks of springs and brooks, which it never leaves; preferring the limpid streams whose fall is rapid, and whose bed is broken with stones and fragments of rocks.

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* The Linnean order of PASSERINE BIRDS commences here.

† SYNONYMS.—Sturnus cinclus. *Linn.*—Merle d'eau. *Bⁱff.*—Water Ouzel, Water Crake. *Penn.*—Water Crow or Piet. *Montagu.*

Its habits are very singular. Aquatic birds, with palmated feet, swim or dive; those which inhabit the shores, without wetting their body, wade with their tall legs; but the Water Ouzel walks quite into the flood, following the declivity of the ground. It is observed to enter by degrees, till the water reaches its neck; and it still advances, holding its head not higher than usual, though completely immersed. It continues to walk under the water, and even descends to the bottom, where it saunters as on a dry bank. The following is M. Herbert's account of this extraordinary habit, which he communicated to the count de Buffon:

"I lay ambushed on the verge of the lake Nantua, in a hut formed of pine-branches and snow, where I was waiting till a boat, which was rowing on the lake, should drive some wild ducks to the water's edge. Before me was a small inlet, the bottom of which gently shelved, that might be about two or three feet deep in the middle. A Water Ouzel stopped here more than an hour, and I had full leisure to view its manœuvres. It entered into the water, disappeared, and again emerged on the other side of the inlet, which it thus repeatedly forded. It traversed the whole of the bottom, and seemed not to have changed its element, and discovered no hesitation or reluctance in the immersion. However, I perceived several times, that as often as it waded deeper than the knee, it displayed its wings, and allowed them to hang to the ground. I remarked too, that when I could discern it at the bottom of the water, it appeared enveloped with air, which gave it

a brilliant surface; like some sorts of beetles which are always in water inclosed in a bubble of air. Its view in dropping its wings on entering the water might be to confine this air; it was certainly never without some, and it seemed to quiver. These singular habits were unknown to all the sportsmen with whom I talked on the subject; and, perhaps, without the accident of the snow-hut, in which I was concealed, I should also have been ever ignorant of them; but the above facts I can aver, as the bird came quite to my feet, and that I might observe it I refrained from killing it*."

This bird is found in many parts of Europe. The female makes her nest on the ground, in some mossy bank near the water, of hay and dried fibres, lining it with dry oak-leaves, and forming to it a portico or entrance of moss. The eggs are five in number, white, tinged with a fine blush of red†. A pair of these birds, which had for many years built under a small wooden bridge in Caermarthenshire, were found to have a nest early in May: this was taken, but it had no eggs, although the bird flew out of it at the time. In a fortnight after, they had completed another nest in the same place, containing five eggs, which was taken; and in a month after this a third nest, under the same bridge, was taken, that had in it four eggs; undoubtedly the work of the same birds, as no others were seen about that part. At the time the last nest was taken the female was sitting; and the instant she quitted it she plunged into the water, and disappear-

* Buffon. † Penn. Brit. Zool. i. 312.

ed for a considerable time, till at last she emerged at a great distance down the stream.—At another time a nest of the Water Ouzel was found in a steep projecting bank (over a rivulet) clothed with moss. The nest was so well adapted to the surrounding materials, that nothing but one of the old birds flying in with a fish in its bill could have led to the discovery. The young were nearly feathered, but incapable of flight; and the moment the nest was disturbed, they fluttered out and dropped into the water, and, to the astonishment of the persons present, instantly vanished, but in a little time reappeared at some distance down the stream; and it was with difficulty that two out of the five could be taken.

The Water Ouzel will sometimes pick up insects at the edge of the water. When disturbed it usually flirts up its tail, and makes a chirping noise. Its song in spring is said to be very pretty. In some places it is supposed to be migratory *.

THE THRUSH TRIBE.

The Thrushes have the following generic character: a straightish bill, bending towards the point, and slightly notched near the end of the upper mandible: the nostrils oval, and for the most part naked: the tongue slightly jagged at the end: the corners of

* Montagu, art. Ouzel Water.

the mouth furnished with a few slender hairs: and the middle toe connected to the outer as far as the first joint.

Most of the species, which are very numerous, feed on berries, and particularly on those of the juniper. Many of them have a melodious song.

THE FIELDFARE*.

These birds, which are well known winter inhabitants of this island, arrive here in great flocks from Russia, Siberia, and other more northern parts of the continent, about the beginning of October, and feed during that season on the hawthorn, holly, and other berries. They leave us in March for their breeding-places in Sweden and Norway.

As they are associated in flocks, and are in a foreign country, they have evident marks of keeping a kind of watch, to remark and announce the appearance of danger. On approaching a tree that is covered with them, they continue fearless till one at the extremity of the bush, rising on his wings, gives a loud and peculiar note of alarm; when they all immediately fly, except one other, who continues till the person approaches still nearer, to certify, as it were, the reality of the danger, and then he also flies off, repeating the note of alarm.

Though they build their nests in high trees, and sit on trees in the day-time, yet they always roost on the ground.—They were held in high esteem by

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* Synonyms.—Turdus pilaris. *Linn.*—Litterne ou Tourdelle. *Buff.*—*Bew. Birds, p.* 98.

the Roman epicures, who had them in their aviaries, and fattened them with crumbs of bread mixed with minced figs.

THE BLACKBIRD*.

This well-known bird needs no description. It breeds early, and prepares a nest composed externally of green moss, fibrous roots, and other similar materials: the inside is plastered with earth, and afterwards lined with fine dry grass. The nest is usually placed in a thick bush, or against the side of a tree, or on a stump in the side of a bank. The female lays four or five light blue eggs, thickly covered with pale rust-coloured spots, particularly at the large end: these are hatched after about fourteen days incubation.

Its food is principally worms and shelled snails; the latter of which, in order to get at the animal, it dashes with great dexterity against the stones: all kinds of insects as well as fruit are also eagerly sought after. In confinement it will eat crumbs of bread, and even flesh either raw or cooked.

This is a solitary bird, never congregating, but preferring woods and retired situations. Its song is a shrill kind of whistle of various notes, which although extremely fine, is too loud for any place except the woods or open grounds. It commences this early in the spring, and continues it through

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* Synonyms.—Turdus Merula. *Linn.*—Merle. *Buff.*—Amsel. *Montagu.*—*Brew. Birds, p.* 94.—*Penn. Brit. Zool. vol. i. tab.* 42.

some part of the summer; it desists during the moulting season, but resumes it for some time in September and the first winter months*.

THE MOCKING BIRD†.

The Mimic Thrush, or Mocking Bird, is about the size of a blackbird, but somewhat more slender. The plumage is grey, but paler on the under parts than above.

It is common throughout America and Jamaica; but changes its place in the summer, being then seen much more to the northward than in winter. It cannot vie with the feathered inhabitants of those countries in brilliancy of plumage, but is content with much more rare and estimable qualifications. It possesses not only natural notes of its own, which are truly musical and solemn, but it can at pleasure assume the tone of every other animal in the forest, from the humming bird to the eagle, and descending even to the wolf or the raven. One of them confined in a cage has been heard to mimic the mewing of a cat, the chattering of a magpie, and the creaking of a sign in high winds.

This capricious little mimic seems to have a singular pleasure in archly leading other birds astray. He is said at one time to allure the smaller birds with the call of their mates, and when they come near,

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* Montagu, art. Blackbird.—Penn. Brit. Zool. i. 309.

† SYNONYMS.—Turdus Polyglottus. *Linn.*—Grand Moqueur. *Buff.*—Singing Bird, Mocking Bird, or Nightingale. *Sloane.*—Mock Bird. *Catesby.*—Mimic Thrush. *Penn.*

to terrify them with the scream of an Eagle. There is scarcely a Bird of the forest that is not at some time deceived by his call.

But it is not like the mimics among mankind, who very seldom possess any independent merit. A Garrick and a Foote have not pleased more in their own characters than the Mocking-bird does in his. It is the only one of the American singing Birds that can be compared with those of Europe, and were it not for the attention that he pays to any sort of disagreeable noises which tend to debase his best notes, there can be little doubt but he would be fully equal to the song of the Nightingale in its whole compass.* He frequents the dwellings of the American farmers, and, sitting on the roof or chimney, sometimes pours forth the most sweet and varied notes imaginable. The Mexicans, on account of their various notes and their imitative powers call these the "Birds of Four Hundred Tongues." In the warmer parts of America they sing incessantly from March to August, both day and night, beginning with their own compositions, and frequently finishing by borrowing from the whole feathered choir. They repeat their tunes with such artful sweetness, as to excite both pleasure and surprize.

It is not, however, in the powers of voice alone that these Birds are pleasing, they may even be said to dance. When excited into a kind of extacy by their own music, they gradually raise themselves

* Phil. Tran. vol. lxiii.

from the place where they stand, and with their wings extended, drop with their head down to the same spot, and whirl round, accompanying their melody with a variety of pretty gesticulations.*

They frequently build their nests in the bushes or fruit trees about the houses, but they are so shy, that if a person only looks at the nest, they immediately forsake it. The young may be brought up in a cage and rendered domestic, but this is to be done only with great difficulty, not one attempt in ten succeeding. If the young are taken in the nest, the mother will feed them for a few days, but is sure to desert them afterwards. If a cat happen to approach the nest, the parent Bird will fly at the head of the animal, and with a hissing noise scare it away.

It feeds its young with grasshoppers, and when it wants any of these insects, it flies into the pastures, flaps its wings near the ground, and makes a booty of three or four at a time, with which it returns to the nest. It also feeds on different kinds of berries; and is itself eaten by the Americans, who account it very delicate food.†

THE BLUE THRUSH.‡

The Blue Thrush is somewhat smaller than our common species. The bill is blackish, and the quill-feathers, legs, and tail brown. It lives altogether among the rocks and precipices in the

* Brown's Jamaica, 469.—Penn. Arct. Zool. ii. 15. † Pen. Arct. Zool.

‡ Synonyms.—Turdus Cyaneus. *Lynn.*—Merle Bleu. *Buff.*—Indian Mock-bird. *Ray.*—Solitary Sparrow. *Edwards.*—Blue Thrush. *Lath.*

highest parts of the Alps, which are covered with almost perpetual snow.

At the beginning of autumn it changes its colour, and by the setting in of winter becomes entirely black. In the spring it resumes it blue colour.

The nests of these birds are formed in deep holes, in very high and almost inaccessible situations, and in the most secret recesses of the mountains. They are such extremely cunning animals, that after they have once left the nest, the most ingenious contrivances to take them are to no purpose. The bird-catchers, therefore, by secreting themselves about places that they most frequent, generally contrive to watch them to their retreats; by means of ropes, &c. they are then enabled to reach the place in which the nest is deposited; but as the old Birds always fly furiously at the eyes of their annoyers, as if conscious that the face was the most tender part, they are under the necessity of guarding this carefully against their attacks.

When taken, they are soon rendered perfectly docile, and are able to articulate words with great distinctness. Their song is also loud, clear, and melodious, and if awakened at midnight, and called on to sing, they will immediately echo forth their warblings, with as much readiness as in the day.*

* Willughby, 192.

THE LOCUST-EATING THRUSH*.

To this new species, which is found in the interior of the South of Africa, and only met with in places where the Migrating Locusts† frequent, Mr. Barrow has affixed the specific name of *Gryllivorus*. This seems to have been done with great propriety, as, when such is to be obtained, its whole food seems to consist of the larvæ of this insect; and, except when the Locust infests any particular district, this Bird is very seldom to be found there.

The head, breast, and back, are of a pale ash-colour; and the abdomen and rump white. The wings and tail are black; the latter short, and a little forked. From the angle of the mouth a naked area of sulphureous yellow extends under the eye, and a little beyond it; and there are two naked black streaks under the throat.

Nature, which has seldom given a bane without accompanying it with an antidote, seems to have peculiarly ordained this Bird as a relief to the inhabitants of the country where it is found, from the dreadful attacks of these most voracious and most numerous of all insects. But, however astonishing the multitudes of Locusts may be, the numbers of Gryllivori are not less so. Their nests, which at a distance seem of a most enormous size, appear on examination to consist of a number of cells, each of which forms a separate nest, with a tube that

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* Turdus Gryllivorus, *Barrow*. † Gryllus Migratorius of Linnæus.

leads into it through the side; so that what seemed but one great nest, is found to consist of a little republic of perhaps ten or twenty. One roof of interwoven twigs covers the whole, like that made over the nest of the magpie of our country.

Mr. Barrow saw a vast number of these in the district of Sneuwberg, about 150 leagues north-east of the Cape. The Gryllivori had not visited that colony for thirteen years before; that is to say, since the last time the Locusts had infested it. These birds had, he says, taken up a temporary abode here, in a place where they were not likely, in a short space of time, to be under the necessity of quitting for want of food. Of the innumerable multitudes of the incomplete insect, or larva of the Locusts, that at this time infected this part of Africa, no adequate idea could possibly be formed: for an area of near two thousand square miles, the whole surface of the earth might literally be said to be covered with them.

The Gryllivori attended closely the last flight of Locusts, and departed along with them; since which time, till the year 1797, that in which Mr. Barrow visited Africa, not one of them was to be found in the country.*

* Barrow's Travels, 256.

THE GROSBEAK TRIBE.

IN the Grosbeaks we observe a ſtrong, thick, and convex beak, rounded from the base to the point of each mandible, and admirably adapted for breaking in pieces the shells of the seeds on which they feed. The nostrils are small and round; and the tongue is formed as if the end was cut off. The toes, except in one species, are placed three forwards.

THE CROSS BILL.*

Doctor Townson, while at Gottingen, kept several Cross-bills, which, by kind treatment soon becoming tame, he suffered to be loose in his study. He had thus constant opportunities of observing them, and as often of admiring their docility and sagacity; but the singular structure of their bills chiefly engaged his attention.

This structure the Comte de Buffon, perhaps unthinkingly, and certainly very unjustly, has considered as one of Nature's freaks, calculated to render the Bird much less essential service than that of a beak in some other form would have done. But notwithstanding the apparently awkward and useless ſhape of this member, it has been found, on attentively watch-

* SYNONYMS.—Loxia Curvirostra. *Linn.*—Bec Croise. *Buffon.*—Shell Apple, or Croſs-bill. *Penn.*—Croſs-beak. *Townson.*—*Bew. Birds, p.* 130.

ing the manners of the bird, to have the best possible adaption to its destination and habits.

The two mandibles do not lie straight, but pass, for a considerable part of their length, on the side of each other, like the blades of a pair of scissars. By means of this peculiar construction, the Crossbills are able to procure their food with the utmost address. They live principally on the seeds of the cones of the fir or pine, and it is to extract these that this structure is principally adapted. In this operation they fix themselves across the cone, then bring the points of the beak from their crossed or lateral position, to be immediately over each other. In this reduced compass, they insinuate it between the scales, and, opening the two mandibles to their usual position sideways, force open the scales; and then again bringing the points into contact, pick out the seed, in the same manner as if the bill had the form of those of other birds.*

The degree of lateral force which they are able to exert, is very surprising, and they are at times fond of exerting it for mere amusement, which renders them, in a tame state, not a little mischievous. Those that Doctor Townson had at Gottingen would often come to his table while he was writing, and carry off his pencils, little chip boxes, in which he occasionally kept insects, and other

* While in this act they are so perfectly intent on their business, as to suffer themselves to be taken by means of a horse-hair noose fixed to a long fishing rod. They are discovered by the twittering noise they make while feeding. Montague, art. Cross-bill.

similar objects, and tear them to pieces almost instantaneously. Their mode of operation was first to peck a little hole, to insert in this their bill, and then split or tear the object by the lateral force. When he gave them, as he often did, almonds in their shells, they got at the kernel in the same manner, first pecking a hole, and then enlarging this by wrenching off the pieces by lateral force.

Notwithstanding the apparent awkwardness of this beak, they are able, by bringing the mandibles point to point, even to pick up and eat the smallest seeds. The German bird-catchers generally feed them with poppy and other small seeds; and they shell the hemp seeds as well as any other birds whatever.*

The male Cross-bills are red, varied with brown or green; and at certain seasons of the year they change to a deep red, to orange, or pale yellow. The females are of an olive green, which they also change occasionally. They breed in Austria, building their hemispherical nest in the branches of high trees, in which they lay a few whitish eggs, spotted towards the thicker end with red. They are somewhat rare in this country.

THE GREENFINCH.†

These are very common Birds in this island: their upper parts are of a yellowish green, and the lower

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* Townson's Tracts, 116.

† Synonyms.—Loxi Chloris. *Linn.*—Verdier. *Buff.*——*Bew. Birds, p.* 136.

part of the belly is white. The outer quill feathers are edged with yellow. The tail is forked, and the four lateral feathers yellow at the base. The bill is brownish, and the legs flesh-coloured.

Greenfinches build their nests in hedges, and lay five or ſix eggs, of a pale green, marked with blood-coloured ſpots. During the breeding time, the Bird that is not immediately engaged in incubation or nutrition, may often be ſeen ſporting on the wing, in a pleaſing manner, over the buſh.

They are ſo eaſily tamed, as frequently to eat out of the hand five or ten minutes after they are taken, if there is an opportunity of immediately carrying them into the dark. The Bird ſhould then be put upon the finger, from which, not knowing how to fly in the dark, it will not attempt to move: the finger of the other hand ſhould then be put under its breaſt, on which it will climb. This muſt be repeated eight or ten times; and by ſtroking and careſſing the Bird at the intervals, it will find that no injury is intended to it. The light being then let in by degreſs, it will very frequently eat bruiſed ſeed out of the hand, and afterwards continue tame.*

THE CARDINAL GROSBEAK.†

This Bird is near eight inches in length. The bill is ſtout and of a pale red colour. On the head

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* Penn. Brit. Zool. i. 322.

† SYNONYMS.—Loxia Cardinalis. Linn.—Groſbec de Virginie. *Buff.*—Red Groſbeak. *Albin.*—Cardinal Groſbeak. *Latham.*

is a pointed crest: the plumage is in general of a fine red, but round the bill and throat it is black. The legs are of the same colour as the bill.

It is an inhabitant of several parts of North America, and from the melody of its song, which is said somewhat to resemble that of the Nightingale, some of the Americans give it that name. In spring and during great part of the summer, it sits on the tops of the highest trees, and with its loud and piercing notes makes the forest echo.

The Cardinal Grosbeaks are chiefly remarkable for laying up their winter provision of maize and buck-wheat, during the summer. Near a bushel of maize has been found in the retreat of one of these birds, artfully covered with leaves and small branches of trees, and only a small hole was left for the bird to enter at.*

The inhabitants frequently keep them in cages, where they will sing, with a very short interval of silence, through the whole year.

THE GRENADIER GROSBEAK.†

The Grenadier Grosbeak is about the size of a Sparrow. The body is in general of a beautiful red colour. The forehead, sides of the head, chin, breast, and belly, are black. The wings are brown, and the legs pale brown.

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* Du Pratz, 282.

† Synonyms.—Loxia Orix. *Linn.*—Cardinal du Cap de Bonne Espérance. *Buff.*—Grenadier Grosbeak. *Latham.*

The Cape of Good Hope and some other parts of Africa, are frequented by this Bird, which is supposed to be the Finch, described by Kolben in his account of the Cape. He says it is chiefly found in marshy and reedy grounds, where it makes its nest and produces its young. The nest is formed among the reeds with small twigs, interwoven so closely with cotton as not to be penetrated by any weather. It is also divided into two compartments, of which the upper is for the male, and the lower for the female and young. In winter, he further informs us, that these Birds change from scarlet to aſh-colour.

The appearance of these Birds among the green reeds of their native climates, is said to have a wonderful effect; for from the extreme brightness of their colours, they appear like so many scarlet lilies.

THE PHILIPPINE GROSBEAK.*

The length of the present species is about five inches and a half. The bill and some adjacent parts are brown. The top of the head, and the hind part of the neck and back are yellow. The lower part of the back is brown. The fore parts of the neck and breast are yellow, and from thence under the belly the colour is yellowish white. The legs are also yellowish.

These Birds are found in the Philippine islands, and in some parts of Abyssinia, where they form a very curious nest, in the form of a long cylinder, swelling out into a globular or somewhat oval shape. This is composed of various kinds of fine vegetable fibres, and fastened, by its upper extremity, to the outer

* Synonyms.—Loxia Philippina. *Linn.*—Toucnam Courv'. *Buff.*—

branch of a tree. The entrance is from beneath, from whence a passage is made to the globular cavity in which an inner nest and the eggs are placed in perfect security.

THE ABYSSINIAN GROSBEAK.*

This is somewhat larger than the last species, having the bill strong and black; the head, throat, and breast black; the upper parts of the body, the belly and thighs, of pale yellowish brown; the quills and tail brown, edged with yellow; and the legs reddish grey.

This Bird is found in Abyssinia; and forms a curious nest in a pyramidal shape, which is suspended from the ends of branches like those of some others of this tribe. The opening is on one side, facing the east: the cavity is separated in the middle by a partition, up which the Bird rises perpendicularly about half way, when descending, the nest is within the cavity on one side. By this means the brood is defended from Snakes, Squirrels, Monkies, and other mischievous animals, besides being secured from the rains, which in that country sometimes last for five or six months together.

THE BENGAL GROSBEAK.†

The Bengal Grosbeak seems to be the same as the one described by Sir William Jones in the Asiatic Researches. It is, he says, "rather larger than a Sparrow, with yellow brown plumage, a yel-

* Synonyms.—Loxia Abyssinica. *Linn.*— Grosbec d'Abyssinie. *Buff.*—

† Synonyms.—Loxia Bengalensis. *Linn.*—Orchef. *Buff.*—Bengal Sparrow. *Albin.*—Yellow-headed Indian Sparrow. *Edwards.*—Indian Grosbeak. Bayas.—*Asiat. Res.*

lowish head and feet, light-coloured breast, and a conic beak, very thick in proportion to its body.

" This bird is exceedingly common in Hindostan: he is astonishingly sensible, faithful and docile, never voluntarily deserting the place where his young are hatched, but not averse, like most other birds, to the society of mankind, and easily taught to perch on the hand of his master. In a state of nature he generally builds his nest on the highest tree that he can find, especially on the palmyra, or on the Indian fig-tree, and he prefers that which happens to overhang a well or a rivulet: he makes it of grass, which he weaves like cloth, and shapes like a large bottle, suspending it firmly on the branches, but so as to rock with the wind, and placing it with its entrance downwards to secure it from birds of prey. His nest usually consists of two or three chambers; and it is the popular belief that he lights them with Fire-flies, which he is said to catch alive at night, and confine with moist clay or with cow-dung. That such Flies are often found in his nest, where pieces of cow-dung are also stuck, is indubitable; but as their light could be of little use to him, it seems probable that he only feeds on them.

" He may be taught with ease to fetch a piece of paper, or any small thing that his master points out to him. It is an attested fact, that if a ring be dropped into a deep well, and a signal given to him, he will fly down with amazing celerity, catch the ring before it touches the water, and bring it up to his master with apparent exultation; and it is confidently asserted, that if a house or any other place

be shown to him once or twice, he will carry a note thither immediately, on a proper signal being made. One instance of his docility I can myself mention with confidence, having often been an eye-witness of it. The young Hindoo women at Benares, and in other places, wear very thin plates of gold, called *ticas*, slightly fixed, by way of ornament, between their eye-brows; and when they pass through the streets, it is not uncommon for the youthful libertines, who amuse themselves with training these Birds, to give them a signal, which they understand, and send them to pluck the pieces of gold from the foreheads of their mistresses, which they bring in triumph to the lovers."

THE SOCIABLE GROSBEAK.*

The Sociable Grosbeaks are inhabitants of the interior country at the Cape of Good Hope, where they were first discovered by Mr. Paterson.

Few Birds live together in such large societies, or have a mode of nidification so uncommon as these. They build their nests in a species of mimosa, which grows to an uncommon size, and seems well suited to them, on account of its ample head, and strong wide-spreading branches, well calculated to admit and support the extensive mansion they have to erect upon it. The tallness and smoothness of its trunk also is a perfect defence against the Serpent and Monkey tribes. The mode in which the nests are fabricated is highly curious. In one tree, described

* Loxia Socia.

by Mr. Paterson, there could not be fewer than from 800 to 1000 under one general roof. Mr. P. calls it a roof, because he says it resembles that of a thatched house, and projects over the entrance of the nest below, in a very singular manner. The industry of these birds, "Seems almost equal (says this traveller) to that of the bee: throughout the day they appear to be busily employed in carrying a fine species of grass, which is the principal material they employ for the purpose of erecting this extraordinary work, as well as for additions and repairs. Though my short stay in the country was not sufficient to satisfy me by ocular proof, that they added to their nest as they annually increased in numbers, still from the many trees which I have seen borne down with the weight, and others which I have observed with their boughs completely covered over, it would appear that this is really the case. When the tree, which is the support of this aërial city, is obliged to give way to the increase of weight, it is obvious that they are no longer protected, and are under the necessity of rebuilding in other trees. One of these deserted nests I had the curiosity to break down, so as to inform myself of the internal structure of it, and found it equally ingenious with that of the external. There are many entrances, each of which forms a regular street, with nests on both sides, at about two inches distance from each other. The grass with which they build is called the Boshman's-grass: and I believe the seed of it to be their principal food; though, on examining their nests, I found the wings and legs of different insects. From

every appearance, the nest which I dissected had been inhabited for many years; and some parts of it were much more complete than others: this, therefore, I conceive nearly to amount to a proof, that the animals added to it at different times, as they found necessary, from the increase of the family, or rather of the nation or community."*

THE BULFINCH.†

This species is pretty common in England, where it makes its nest in bushes, in which, in May, the female lays five or six eggs.

In the summer it mostly frequents woods, and the more retired places; but in winter it approaches gardens and orchards, where it makes great havoc among the buds of the trees.

In a state of nature the Bulfinch has but three cries, all of which are unpleasant: but if man deigns to instruct it methodically, and accustom it to finer, mellower, and more lengthened strains, it will listen with attention; and the docile Bird, whether male or female, without relinquishing its native airs, will imitate exactly, and sometimes even surpass its master. "I know a curious person (says the author of the *Ædonologie*) who, having whistled some airs quite plain to a Bulfinch, was agreeably surprized to hear the Bird add such graceful turns, that the master could scarcely re-

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* Patterson's Journies among the Hottentots.

† SYNONYMS.—Loxia Pyrrhula. *Linn*—Bullfinch, Alp, or Nope. *Willughby*.—Red-hoop, Tony-hoop. *Montagu*.—*Brew. Birds*, p. 138.

cognize his own music, and acknowledged that the scholar excelled him." It must, however, be confessed, that, if the Bulfinch be ill-directed, it acquires harsh strains. A friend of the Comte de Buffon saw one that had never heard any person whistle but carters, and it whistled like them, with the same strength and coarseness. The Bulfinch also learns easily to articulate words and sentences, and utters them with so tender an accent that we might almost suppose it felt their force.

These Birds are, besides, susceptible of personal attachment, which is often strong and durable.—Some have been known, after escaping and living a whole year in the woods, to recognize the voice of their mistress, and return to forsake her no more. Others have died of melancholy on being removed from the first object of their attachment. They will also remember injuries received: a Bulfinch that had been thrown to the ground in its cage by some of the rabble, though it did not appear much affected at the time, fell into convulsions ever after at the sight of any mean-looking person, and expired in one of these fits eight months after its first accident.

THE FINCH TRIBE.

THE Finches are readily distinguished from other Birds, by their having a very conical and sharp-pointed bill, which is somewhat slender towards

the end. They are a numerous and active race, dispersed very widely over the world, and feeding principally on insects and grain.

THE COMMON SPARROW.*

No Bird is better known in every part of Great Britain than the Sparrow, which frequents our habitations, and is seldom absent from our gardens or fields. It is a very familiar Bird, but so crafty as not easily to be taken in snares.

In a wild state its note is only a chirp, arising, however, not from want of powers, but from its attending solely to the note of the parent-bird. A Sparrow, when fledged, was taken from the nest and educated under a Linnet: it also heard by accident a Goldfinch, and its song was, in consequence, a mixture of the two.

Few Birds are more execrated by the farmers, and, perhaps, more unjustly so, than the Sparrows. It is true they do us some injuries in our rural economy, but they have been fully proved to be much more useful than they are noxious. Mr. Bradley, in his General Treatise on Husbandry and Gardening, shews, that a pair of Sparrows, during the time they have their young to feed, destroy on an average every week 3360 caterpillars. This calculation he founded upon actual observation. He discovered that the two parents carried to the nest forty caterpillars in an hour. He supposed the

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* SYNONYMS.—Fringilla domestica. *Linn.*—Moineau franc. *Buff.*—House Sparrow. *Willughby.*——*Brow. Birds. p.* 154.

Sparrows to enter the nest only during twelve hours each day, which would cause a daily consumption of 480 Caterpillars. This sum, multiplied by 7, or the days of the week, gives 3360 Caterpillars extirpated weekly from a garden. But the utility of these Birds is not limited to this circumstance alone; for they likewise feed their young with Butterflies and other winged insects, each of which, if not destroyed in this manner, would be the parent of hundreds of Caterpillars.

Sparrows build early in the spring, and generally form their nests under the eaves of houses, and in holes in the walls: when such convenient situations are not to be had, they build in the trees a nest bigger than a man's head, with an opening like a mouth at the side, resembling that of a Magpie, except that it is formed of straw and hay, and lined with feathers, and so nicely managed, as to be a defence both against wind and rain.*

Mr. Smellie relates a pleasing anecdote of the affection of these Birds towards their young.—"When I was a boy (says this gentleman) I carried off a nest of young Sparrows about a mile from my place of residence. After the nest was completely removed, and while I was marching home with them in triumph, I perceived, with some degree of astonishment, both parents following me at some distance, and observing my motions in perfect silence. A thought then struck me, that they might follow me home, and feed the

* Darwin's Zoonomia.

young according to their usual manner. When just entering the door I held up the nest, and made the young utter the cry which is expressive of the desire of food. I immediately put the nest and the young in the corner of a wire-cage, and placed it on the outside of a window. I chose a situation in the room where I could perceive all that should happen, without myself being seen. The young animals soon cried for food. In a short time both parents, having their bills filled with small Caterpillars, came to the cage, and after chatting a little, as we would do with a friend through the lattice of a prison, gave a small worm to each. This parental intercourse continued regularly for some time, till the young were completely fledged, and had acquired a considerable degree of strength. I then took one of the strongest of them, and placed him on the outside of the cage, in order to observe the conduct of the parents after one of their offspring was emancipated. In a few minutes both parents arrived, loaded, as usual, with food. They no sooner perceived that one of their children had escaped from prison, than they fluttered about, and made a thousand noisy demonstrations of joy both with their wings and their voices. These tumultuous expressions of unexpected happiness at last gave place to a more calm and soothing conversation. By their voices and their movements it was evident that they earnestly intreated him to follow them, and to fly from his present dangerous state. He seemed to be impatient to obey their mandates; but, by his gestures, and the feeble sounds he ut-

tered, he plainly told them that he was afraid to try an exertion he had never before attempted.—They, however, incessantly repeated their solicitations; by flying alternately from the cage to a neighbouring chimney-top, they endeavoured to shew him how easy the journey was to be accomplished. He at last committed himself to the air, and landed in safety. Upon his arrival another scene of clamorous and active joy was exhibited. Next day I repeated the same experiment, by exposing another of the young on the top of the cage. I observed the same conduct with the remainder of the brood, which consisted of four. I need hardly add, that not one either of the parents or children ever afterwards revisited the execrated cage.*"

THE GOLDFINCH.†

The Goldfinches are very beautiful and well-known Birds, much esteemed for their docility, and the sweetness of their note. They are fond of orchards, and frequently build their elegant mossy nest in an apple or pear-tree. The eggs are five, white, marked with deep purple spots at the large end.

They are readily tamed after being caught, and are remarkable for their extreme docility, and the attention they pay to instructions. It requires very little trouble to teach them to perform several movements with accuracy, to fire a cracker, and

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* Smellie's Philosophy of Natural History, ii. 439.

† Synonyms.—Fringilla carduelis. *Linn.*—Chardonneret. *Buff.*—Goldfinch, or Thistlefinch. *Willughby.*——*Bew. Birds. p.* 165.

to draw up small cups containing their food and drink; but for this last purpose they must have fastened round them a small belt of soft leather, two lines broad, with four holes, through which the feet and wings are passed; and the ends joining under the belly, are to be held by a ring which supports the chain and cup.

In solitude the Goldfinch delights to view its image in a mirror, fancying, probably, that it sees another of its own species; and this attachment to society seems to equal the cravings of nature; for it is often observed to pick up the hemp-seed, grain by grain, and advance to eat at the mirror, imagining, no doubt, that it is thus feeding in company.

Towards winter these Birds usually assemble in flocks. They feed on various kinds of seeds, but are more partial to those of the thistles than any others.

THE CANARY-FINCH.*

This species, which has the general name of Canary-bird, was originally peculiar to those islands from whence its name was derived. They appear to have been first brought into Europe about the fourteenth century; and they are now so commonly bred in our own country, that we are not often under the necessity of crossing the ocean for them.

Not being able to obtain any material account of

* Synonyms.—Fringilla Canaria. *Linn.*—Serin des Canaries. *Buff.*—Canary-bird. *Willughby.*

the manners of a Bird known to every person, we have introduced it here principally for the purpose of reciting a singular anecdote of one of them, that is related by Dr. Darwin:—"On observing a Canary-bird (says this gentleman) at the house of Mr. Hervey, near Tutbury, in Derbyshire, I was told it always fainted away when its cage was cleaned, and I desired to see the experiment. The cage being taken from the ceiling, and its bottom drawn out, the Bird began to tremble, and turned quite white about the root of its bill: he then opened his mouth as if for breath, and respired quick, stood straighter up on his perch, hung his wings, spread his tail, closed his eyes, and appeared quite stiff and cataleptic for near half an hour, and at length, with much trembling and deep respirations, came gradually to itself.*"

It is by no means generally known, that the song of the Canary-bird is generally composed either of the Titlark's or the Nightingale's notes. Mr. Barrington saw two of the Birds which came from the Canary-iſlands, neither of which had any song at all; and he was informed that a ship afterwards brought over a great many of them which sung as little. Most of the Birds that are imported from the Tyrol have been educated under parents, the progenitors of which were instructed by a Nightingale. Our English Canary-birds have, however, more of the Titlark notes.

* Darwin's Zoonomia.

THE FLYCATCHER TRIBE.

THE characters of this genus are a bill flatted at the base, almost triangular, notched at the end of the upper mandible, and beset with bristles. The toes in most of the species are divided as far as the origin.

SPOTTED FLYCATCHER.*

The length of this species is about four inches and three quarters: the bill is dusky and beset with short bristles: the head and back are light brown, obscurely spotted with black: the wings and tail are dusky, and the former edged with white: the breast and belly are white: the throat, sides, and under the wings, are tinged with red; and the legs are black.

This is one of the most mute, and most familiar, of all our summer Birds. It visits us in spring, brings forth its young among us, and disappears in September.

Mr. White says, that a pair of these Birds built every year in the vines that grew on the walls of his house at Selborne. They one year inadvertently placed their nest on a naked bough, perhaps in a shady time, not being aware of the inconvenience that followed; but a hot, sunny season coming on before the brood was half fledged, the re-

* SYNONYNS.—Muscicapa Grisola. *Linn.*—Gobe-Mouche, *Buff.*—Stoparola. *Ray.*—Cobweb. *Morton.*—Rafter, Bee-bird, Cherry-sucker, Chanchider. *Montagu.*

flection of the wall became insupportable, and must inevitably have deſtroyed the tender young, had not affection suggested an expedient, and prompted the parent Birds to hover over the nest all the hotter hours, while, with wings expanded, and mouths gaping for breath, they screened off the heat from their suffering offspring.

The female lays four or five eggs: the nest is carelessly made, and consists chiefly of moss, mixed with wool and fibres, so strong, and "so large, (says the Comte de Buffon) that it appears surprising how so small an artificer could make use of such stubborn materials." When its young are able to fly, it retires with them to the woods, where it sports with them among the higher branches of the trees, sinking and rising perpendicularly among the Flies which hum below.

This Bird feeds on insects, which it catches on the wing: it sometimes watches for its prey sitting on a branch or post, and with a sudden spring takes it as it flies, and then immediately returns to its station to wait for more. It is said, likewise, to be fond of some kinds of fruit. It is generally believed to have no song. Mr. Revett Sheppard, however, informed the editor, that in the garden belonging to the master of Caius College, Cambridge, one of them used frequently to sit on a rail, and entertain him with its notes, which, he says, were very pleasing, and between those of a Wagtail and Golden-crested Wren.

THE LESSER CRESTED FLYCATCHER.*

This species visits the United States of America, in spring, and commonly remains there till late in September, when it retires southerly to winter. It is of a greenish ash colour, on the upper parts of its body, and beneath yellowish white. The wings are marked with a double white band, and on its head is a small crest.

It is but a small Bird, and builds in woods and forests. After the young have left the nests, the parents conduct them to the gardens and habitations of men: here the whole brood dwell in trees near the houses, where they are fed with the common House Fly, and other insects that are caught by the old birds. The young ones are soon able to obtain their food in the same way.

THE LARK TRIBE.

IN this genus the bill is straight, slender, bending a little towards the end, and sharp pointed: the nostrils are covered with feathers and bristles; and the tongue is cloven at the end. The toes are divided to the origin; and the claw of the back toe is very long, and either straight, or very little bent.

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* SYNONYMS.—Muscicapa Acadica. *Linn.*—Wood Pewe in Pennsylvania.—Lesser-crested Flycatcher. *Penn.*

THE SKY-LARK.*

The Sky-lark forms its nest on the ground, generally between two clods of earth, and lines it with dried grass and roots. In this the female lays four or five eggs, which are hatched in about a fortnight; and she generally produces two broods in the year.

When hatched, the mother watches over them with a truly maternal affection; she then may be seen fluttering over their heads, directing their motions, anticipating their wants, and guarding them from danger.

The instinctive warmth of attachment which the female Sky-lark bears to her young, often discovers itself at a very early period, and even before she is capable of discharging the functions of a mother, which might be supposed to precede, in the order of nature, the maternal solicitude. A young hen Bird, says the Comte de Buffon, was brought to me in the month of May, which was not able to feed without assistance; I caused it to be educated, and it was hardly fledged when I received from another place a nest of three or four unfledged Sky-larks. She took a strong liking to these new-comers, which were scarcely younger than herself; she tended them night and day, cherished them beneath her wings, and fed them with her bill. Nothing could divert her tender offices; if the young were torn from her, she flew back to them as soon as she was

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* Synonyms.—Alauda Arvensis. *Linn.*—Alouette. *Buff.*—Field-lark or Sky-lark. *Penn.*——*Bew. Birds, p.* 178.

liberated, and would not think of effecting her own escape, which she might have done an hundred times. Her affection grew upon her; she neglected food and drink; she now required the same support as her adopted offspring, and expired at last consumed with maternal anxiety. None of the young ones survived her; they died one after another, so essential were her cares, which were equally tender and judicious.

The common food of the young sky-larks is worms and insects; but after they are grown up they live chiefly on seeds, herbage, and most other vegetable substances.

They are easily tamed, and become so familiar, as to eat off the table, and even alight on the hand; but they cannot cling by the toes, on account of the form of the hind one, which is too long and straight: this is the reason why they never perch on trees.

The Lark commences his song early in spring, and continues it during the whole of the summer. It is heard chiefly in the morning and evening, and it is one of those few Birds that chaunts his mellow notes on the wing. Thomson elegantly describes it as the leader of the warbling choir:—

> "Up springs the Lark,
> Shrill voic'd and loud, the messenger of morn;
> Ere yet the shadows fly, he, mounted, sings
> Amid the dawning clouds, and from their haunts
> Calls up the tuneful nations."

The Lark mounts almost perpendicularly, and by successive springs, into the air, where it hovers at

a vast height. Its descent is in an oblique direction, unless threatened by some ravenous Bird of prey, or attracted by its mate, when it drops to the ground like a stone. When it first leaves the earth its notes are feeble and interrupted, but as it rises they gradually swell to their full tone. There is something in the concomitant scenery that renders the music of the Lark peculiarly delightful: the pleasing landscape and various rural charms all contribute to heighten our relish for its pleasing song.

These Birds become musical in the spring, and continue so for several months, but in winter their song forsakes them. They then assemble in flocks, grow fat, and are taken in vast numbers by the bird-catchers. As many as four thousand dozen have been known to be taken in the neighbourhood of Dunstable, between September and February; but this holds no proportion with what are sometimes caught in different parts of Germany, where there is an excise upon them. Keysler says, that the *excise* alone produced six thousand dollars (about nine hundred pounds sterling) every year to the city of Leipsic; whose Larks are famous all over Germany, as being of a most delicate flavor. But it is not only at Leipsic that they are taken in such numbers, but also in the country about Naumburg, Merseburg, Halle, and other parts.*

Those caught in the day-time are taken in clap-nets of fifteen yards in length, and two and a half

* Penn. Brit. Zool. i. 355.—Keysler's Travels, iv. 315.

in breadth; and are enticed into their reach by means of bits of looking-glass fixed in a piece of wood, and placed in the middle of the nets. These are put in a quick whirling motion, by a string which the larker commands; he also makes use of a decoy Lark. These kind of nets are used only till the fourteenth of November, for the Larks will not frolic in the air except in fine sunny weather; and of course cannot be inveigled into the snare. When the weather grows gloomy the larker changes his engine, and makes use of a trammel-net, twenty-seven or twenty-eight feet long, and five broad; which is put on two poles, eighteen feet long, and carried by men, who pass over the fields and quarter the ground as a setting dog would; when they hear or feel that a Lark has hit the net, they drop it down, and so the Birds are taken.

THE WARBLER TRIBE.

THE Warblers have a weak and slender bill, small, and somewhat depressed nostrils, and the tongue cloven at the end. The exterior toe is joined beneath to the base of the middle one.

Most of these Birds are insectivorous: some of them are gregarious, and migrate, on the approach of the cold weather, to warmer climates. This is a very extensive tribe, containing in the whole above a hundred and seventy species, of which our own country boasts near twenty.

THE NIGHTINGALE.*

The Nightingale, though greatly and deservedly esteemed for the excellence of its song, is not remarkable for variety or richness of colours. The upper part of its body is of a rusty brown tinged with olive; the under parts are of a pale ash-colour, almost white at the throat and belly. Its length is about six inches.

These Birds leave us in August, in order, as it is supposed, to retire to the distant regions of Asia, and return regularly in the beginning of April; and about a month afterwards begin to construct their nest. They hatch twice, and sometimes even thrice, in the season. They seldom visit the northern or western counties.

It is very remarkable, that all the gay and brilliant Birds of America should be entirely destitute of that pleasing power of song which gives so peculiar a charm to the groves and fields of Europe: and one of our most elegant poets has beautifully expressed the supposed superiority of our island in this respect:—

> Nor envy we the gaudy robes they lent
> Proud Montezuma's realm, whose legions cast
> A boundless radiance waving on the sun,
> While Philomel is ours: while in our shades
> Through the soft silence of the listening night
> The sober-suited songstress trills her lay.

The Nightingale seems to have been fixed upon almost universally as the most capital of singing

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* Synonyms.—Motacilla Luscinia. *Linn.*—Le Rossignol. *Buff.*—*Bew. Birds, p.* 199.

Birds, which superiority it certainly may boldly challenge: one reason, however, of this Bird's being more attended to than others, is, that it sings in the night. Hence Shakespeare says,

> "The Nightingale, if she should sing by day,
> When ev'ry Goose is cackling, would be thought
> No better a musician than a Wren."

Mr. Barrington once kept a very fine Nightingale for three years, during which time he paid a very particular attention to its song. Its tone was infinitely more mellow than that of any other Bird, though at the same time, by a proper exertion, it could be excessively brilliant. When this Bird *sang its song round*, in its whole compass, he observed sixteen different beginnings and closes, at the same time that the intermediate notes were commonly varied in their succession with so much judgment as to produce a most pleasing variety.—Another point of superiority in the Nightingale is its continuance of song without a pause, which Mr. Barrington observed to be sometimes not less than twenty seconds. Whenever respiration, however, became necessary, it was taken with as much judgment as by an opera singer.

In this place it may be remarked that Birds in general, in a wild state, do not sing above ten weeks in the year, whilst those confined in a cage continue their song for nine or ten months: and a caged Nightingale sings infinitely more sweetly than those which we hear abroad in the spring. These, as the bird-fanciers term it, are so *rank* that they seldom sing any thing but short and loud

jerks, which consequently cannot be compared to the notes of a caged Bird, since the instrument is thus overstrained.

The music of the Nightingale, when abroad, and with the corresponding darkness and scenery, has always been considered as plaintive or melancholy, and sometimes as even of conveying ideas of distress.

> Flet noctem, ramoque sedens, miserabile carmen
> Integrat, et mœstis late loca questibus implet.
>
> Darkling she wails the sadly pleasing strains
> And melancholy music fills the plains.

From the dissections of several Birds made by Mr. John Hunter, at the request of the Hon. Daines Barrington, it appeared that in the best singers the muscles of the larynx were the strongest. Those in the Nightingale were stronger than in any other Bird of the same size.—When we consider the size of many singing Birds, it is really amazing to what a distance their notes may be heard. It is supposed that those of a Nightingale may be heard above half a mile, if the evening is calm.

Nightingales will adopt the notes of other Birds, and they will even chant the stiff airs of a Nightingale-pipe. They may be instructed even to sing by turns with a chorus, and repeat their couplet at the proper time. They may be also taught to articulate words. The sons of the emperor Claudius, according to Pliny, had some Nightingales that spoke Greek and Latin. But what that author subjoins is more marvellous: that these Birds

prepared every day new expressions, and even of considerable length, with which they entertained their masters. The arts of flattery might work upon the understandings of young princes; but a philosopher like Pliny ought not to have credited such a story, nor have published it under the sanction of his name. Several authors, accordingly, resting on the authority of the Roman naturalist, have amplified the marvellous tale. Gesner, among others, quotes a letter from a person of credit, (as he states) who mentions two Nightingales belonging to an inn-keeper at Ratisbon, which passed the night in discoursing in German on the political interests of Europe—on the events that had already happened, and on those that might be expected, and that afterwards actually took place.* It is true that the author of the letter endeavours to render the story more probable, by telling us that the Birds only repeated what they had heard of some officers or deputies of the diet, who frequented the tavern: but still the whole is so absurd as to merit no serious refutation.

The Nightingales are solitary Birds, and never associate in flocks like many of the smaller Birds, but hide themselves in the thickest parts of hedges and bushes, and seldom sing but during the night.

The London bird-catchers take them in a net-trap, (somewhat larger than a cabbage-net) the bottom of which is surrounded with an iron-ring. This is baited with a Meal-worm from the baker's

* Willughby.

shop; and ten or a dozen have been sometimes caught by this means in a day.

THE PENSILE WARBLER.*

The Pensile Warbler is near five inches long. The bill is dusky; the head greyish black, and the back deep grey. Round the eye is a white streak, and between that and the bill a range of yellow dots. The throat, neck, and breast are yellow: the belly is white, and the sides of the neck and body are dotted with black spots. The wing-coverts are white and black in bands. The tail is dark grey, having the four outer feathers marked with large spots of white.†

The sagacity displayed by this Bird in building and placing its nest is truly remarkable. It does not fix it at the forking of the branches, as is usual with most other Birds; it suspends it to binders hanging from the netting which it forms from tree to tree, especially those which fall from branches that hang over the rivers and deep ravines. The nest consists of dry blades of grass, the ribs of leaves, and exceedingly small roots, interwoven with the greatest art; it is fastened on, or rather it is worked into the pendent strings. It is really a small bed, rolled into a ball, so thick and compacted as to exclude the rain; and it rocks in the wind without receiving any harm.

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* Synonyms.—Motacilla Pensilis. *Linn.*—Cou-jaune. *Buff.*—Pensile Warbler. *Latham.*

† Latham.

But the elements are not the only enemies against which this Bird has to struggle: with wonderful sagacity it provides for the protection of its nest from other foes. The opening is not made on the top or side of the nest, but at the bottom; nor is the entrance direct. After the Bird has made its way into the vestibule, it must pass over a kind of partition, and through another aperture, before it descends into the abode of its family. This lodgement is round and soft, being lined with a species of lichen, which grows on the trees, or with the silky down of plants.

The Birds of this species have a very delicate song, which is continued throughout the year. They are natives of St. Domingo, and some others of the islands of the West Indies, where they feed chiefly on insects and fruit.

THE COMMON WAGTAIL.*

These active and lively little Birds run about the sides of ponds and small streams in search of insects and worms: and in the spring and autumn are constant attendants on the plough, for the sake of the worms thrown up by that instrument.

The generality of the Wagtails disappear in the autumn, but how they dispose of themselves during the winter is somewhat difficult to account for. They are often to be seen even in the middle of winter.

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* Synonyms.—Motacilla Alba. *Linn.*—Lavandiere. *Buff.*—White Wagtail. *Penn.*—Black and White Water-Wagtail. Pied Wagtail, *Berwick.*——*Bew. Birds. p.* 188.—*Penn. Brit. Zool. i. tab.* 54.

If there happens to be a fine day, and the sun shines bright, they are sure to make their appearance, chirping briskly, and seeming delighted with the fine weather, though they had not perhaps been seen for three weeks or a month before.—Where do they come from? Certainly not from a far-distant country; there not being time for a very long journey in the space of a single day; and, besides, they never seem to be tired or lifeless, but are very brisk and lively whenever they appear.*

THE WHEATEAR.†

This Bird visits England annually in the middle of March, and leaves us in September. The females come firſt, about a fortnight before the males; and they keep coming till the middle of May. In some parts of England they are found in vast plenty, and are much esteemed. About Eastbourne, in Sussex, they are taken in snares made of horse-hair, placed beneath a long turf. Being very timid Birds, the motion even of a cloud, or the appearance of a Hawk, will immediately drive them into the traps. These traps are first set every year on St. James's day, the twenty-fifth of July, soon after which they are caught in astonishing numbers, particularly when we recollect that they are not gregarious, and that more than two or three scarcely ever

* Linn. Tran. i. 126.

† SYNONYMS.—Motacilla Oenanthe. *Linn.*—Cul-blanc, ou Vitrec, ou Motteux. *Buff.*—Wheat-ear, Fallow-smich, White-tail. *Willughby*—White-rump. *Bewick.*——*Bew. Birds, p.* 229.

go together. The numbers annually ensnared in the district of Eastbourne alone, are said to amount to near two thousand dozen. The Birds caught are chiefly young ones, and they are invariably found in the greatest number when a westerly wind prevails: they always come against the wind. A gentleman informed Mr. Markwick, that his father's shepherd once caught eighty-four dozen of them in a day.* Great quantities of them are eaten on the spot by the neighbouring inhabitants; others are picked, and sent up to the London poulterers; and many are potted, being as much esteemed in England as the Ortolans are on the continent.

The vast abundance of these Birds on the downs about Eastbourne, is supposed by Mr. Pennant to be occasioned by a species of fly, their favourite food, that feeds on the wild thyme, and abounds on the adjacent hills.

A few of the Birds breed in the old rabbet-burrows there. The nest is large, and made of dried grass, Rabbets down, a few feathers, and horse-hair. The eggs are from six to eight, and of a light blue colour.†

THE REDBREAST.‡

This pretty Bird needs no description. It is reckoned among the Birds of passage, but, as the Comte de Buffon has elegantly expressed himself, the de-

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* Paper of Mr. Markwick in the Linnean Transactions, vol. 4. p. 17.

† Penn. Brit. Zool. i. 384.

‡ Synonyms.—Motacilla Rubecula. *Linn.*—Le Rouge Gorge. *Buff.*—Robin Redbreast, or Ruddock. *Willughby.*—*Benw. Birds, p.* 204.

parture in the autumn not being marked, or, to use his expression, "not being proclaimed among the Redbreasts, as among other Birds at that season, collected into flocks, many stay behind; and these are either the young and inexperienced, or some which can derive support from the slender resources of the winter. In that season they visit our habitations, and seek the warmest and most sheltered situations; and, if any one still continues in the woods, it becomes the companion of the faggot-maker, cherishes itself at his fire, pecks at his bread, and flutters the whole day round him, chirping its slender *pip*. But, when the cold grows more severe, and thick snow covers the ground, it approaches our houses, and taps on the window with its bill, as if to entreat an asylum, which is cheerfully granted; and it repays the favour by the most amiable familiarity, gathering the crumbs from the table, distinguishing affectionately the people of the house, and assuming a warble, not indeed so rich as that of the spring, but more delicate. This it retains through all the rigours of the season, to hail each day the kindness of its host, and the sweetness of its retreat. There it remains tranquil, till the returning spring awakens new desires, and invites to other pleasures: it now becomes uneasy, and impatient to recover its liberty."

Thomson has charmingly described the annual visits of this little favourite, in lines that have been often quoted.

> The Redbreast, sacred to the household gods,
> Wisely regardful of th' embroiling sky,

In joyless fields, and thorny thickets, leaves
His shivering mate, and pays to trusted man
His annual visit. Half afraid, he first
Against the window beats; then brisk alights
On the warm hearth; then, hopping o'er the floor,
Eyes all the smiling family askance,
And pecks, and starts, and wonders where he is;
Till, more familiar grown, the table crumbs
Attract his slender feet.

The Redbreast generally builds its nest by the roots of trees, in some concealed spot near the ground. This is composed of dried leaves, mixed with hair and moss, and lined with feathers. The female lays from five to seven eggs. In order the more successfully to conceal its nest, we are told that it covers it with leaves, suffering only a narrow winding entrance under the heap to be left.

This Bird feeds principally on insects and worms; and its delicacy in preparing the latter is somewhat remarkable:—It takes a worm by one end, in its beak, and beats it on the ground till the inner part comes away: then, taking it in the same manner by the other end, it cleanses the outer part, which only it eats.

Its general familiarity has given it a peculiar denomination in several countries. The inhabitants of Bornholm call it *Tommi Liden*; the Norwegians, *Peter Ronsmad*; the Germans, *Thomas Gierdet*; and we give to it the familiar name of *Robin Redbreast*.

THE WREN.*

The Wren is found throughout Europe. Its nest is curiously constructed; it is composed chiefly of moss, and lined with feathers, is in shape almost oval, and has only one small entrance. This is generally found in some corner of an out-house, stack of wood, or hole in a wall, near our habitations; but when the Wren builds in the woods, it is often in a bush near the ground, on the stump of a tree, or on the ground itself. The female lays from ten to eighteen eggs. It is very remarkable that the materials of the nest are generally adapted to the place where it is formed; if it is against a hay-rick, its exterior is composed of hay; if against the side of a tree clad with white lichens, it is covered with the same materials; and if it is built against a tree covered with green moss, or in a bank, its exterior always corresponds. The lining is invariably of feathers. The Wren, as is usual with most other Birds, does not begin the bottom of its nest first: when against a tree, its primary operation is, as it were, to trace the outline, which is of an oval shape, upon the bark, and thus fasten it with equal strength to all parts. It then in succession closes the sides and top, leaving only its small hole for entrance. If the nest is placed under a bank, the top is first begun and well secured in some small cavity, by which the fabric is suspended.

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* Synonyms.—Motacilla Troglodytes. *Linn.*—Troglodyte *Buff.*—Kitty Wren. *Bewick.*——*Bew. Birds. p.* 227.

The song of the Wren is much admired, being, though short, a very pleasing warble, and louder than could be expected from the size of the Bird. This it continues throughout the year, and it has been heard to sing unconcerned even during a fall of snow. It sings also very late in the evening, though not like the Nightingale, after it is dark.

THE WILLOW WREN.*

This Bird is a little bigger than the Wren. The upper parts are of a pale olive-green; the under pale yellow, with a streak of yellow over the eyes. The wings and tail are brown, edged with yellowish green; and the legs are yellowish.

It is pretty common in England; is migratory, but comes pretty early. It makes its nest in holes at the roots of trees, in hollows of dry banks and other similar places. This is round, and not unlike that of the Wren. The eggs are dusky white, marked with reddish spots, and are five in number.

A Willow-wren had built in a bank of one of the fields of Mr. White, near Selborne. This Bird, a friend and himself observed, as she sat in her nest; but they were particularly careful not to disturb her, though she eyed them with some degree of jealousy. Some days after, as they passed the same way, they were desirous of remarking how the brood went on; but no nest could be found, till Mr. White happen-

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* Synonyms.—Motacilla Trochilus. *Linn.*—Bouillot ou Chantre. *Buff.*—Small yellow Bird. *Ray.*—Green Wren. *Albin.*—Yellow Wren *Penn.*

ed to take up a large bundle of long green moss, as it were carelessly thrown over the nest, in order to dodge the eye of any impertinent obtruder.

THE TAYLOR BIRD.*

This, as well as the two last, is a very small species, measuring scarcely more than three inches in length. Its colour is entirely yellow.

It inhabits India; and is remarkable for nothing so much as the construction of its nest, which is extremely curious. This is composed of two leaves, the one generally dead, which it fixes, at the end of some branch, to the side of a living one, by sewing both together with little filaments, its bill serving as a needle, in the manner of a pouch or purse, and open at the top. Sometimes, instead of a dead leaf and a living one, two living leaves are sewed together; and thus connected, they seem rather the work of human art, than that of an uninstructed animal. After the operation of sewing is finished, the cavity is lined with feathers and soft vegetable down. The nest and birds are altogether so very light, that the leaves of the most exterior and slender twigs of the trees are chosen for the purpose; and, thus situated, the brood is completely secured from the depredations of every invader.

* SYNONYMS.—Motacil'a Sutoria.—*Linn.*

THE TITMOUSE TRIBE.

The present is a diminutive but sprightly tribe, possessed both of much courage and strength. Their general food is seeds, fruit, and insects, and a few of them will eat flesh. Some of them will venture to assault Birds that are twice or thrice their own size, and in this case they direct their aim chiefly at the eyes. They often seize upon Birds that are weaker than themselves, which they kill, and having picked a hole in the skull, eat out the brains. They are very prolific, laying eighteen or twenty eggs at a time. Their voice is in general unpleasant.

The bill is straight, strong, hard, sharp-pointed, and a little compressed. The nostrils are round, and covered with bristles. The tongue appears cut off at the end, and is terminated by three or four bristles. The toes are divided to their origin; and the back toe is very large and strong.

THE PENDULINE TITMOUSE.*

These Birds are about four inches and a half in length. The fore part of the head is whitish, and the hind part and the neck are ash-coloured. The upper parts of the plumage are grey; the forehead is black; the throat and the front of the neck are of a very

* Synonyms.—Parus Pendulinus. *Linn.*—Mésange de Pologne ou Remiz. *Buff.*—Mountain Titmouse. *Albin.*—Penduline Titmouse. *Latham.*

pale ash-colour; and the rest of the under parts are yellowish. The quills and tail are brown, edged with white; and the legs are reddish grey.*

They are natives of Poland, Italy, Siberia, and most of the intervening country, where they frequent the watry places for the sake of aquatic insects, on which they feed.

The most curious fact in the history of these Birds is the exquisite art displayed in the construction of their nest. They employ the light down found on the buds of the willow, the poplar, and the aspen, on thistles, dandelions, &c. With their bill they entwine this filamentous substance, and form a thick close web, almost like cloth: this they fortify externally with fibres and small roots, which penetrate into the texture, and in some measure form the basis of the nest. They line the inside with the same down, but not woven, that their young may lie soft: they shut it above to confine the warmth, and they suspend it with hemp, nettles, &c. from the cleft of a small pliant branch (over some stream) that it may rock more gently, assisted by the spring of the branch. In this situation the brood are well supplied with insects, which constitute their chief food; and they are well protected from their enemies. The nest sometimes resembles a bag, and sometimes a short purse. The aperture is made in the side, and is almost always turned towards the water: it is nearly round, and only an inch and an half in diameter, or even less, and commonly surrounded by a brim more

* Latham.

or less proturberant: this however is sometimes wanting.

These nests are seen in the fens of Bologna, in those of Tuscany, Lithuania, Poland, and Germany. The peasants regard them with superstitious veneration: one of these nests is usually suspended near the door of each cottage, and the possessors esteem it a defence against thunder, and its little architect as a sacred Bird.

THE CAPE TITMOUSE.*

The Cape Titmouse constructs its nest of the down of a species of Asclepias. This luxurious nest is made of the texture of flannel, and the fleecy hosiery is not more soft. Near the upper end projects a small tube, about an inch in length, with an orifice about three-fourths of an inch in diameter. Immediately under the tube is a small hole in the side that has no communication with the interior of the nest: in this hole the male sits at nights, and thus both male and female are screened from the weather.†

THE SWALLOW TRIBE.

THE bill in the Swallows is short, broad at the base, small at the point, and a little bending: the

* SYNONYMS.—Parus Capensis. *Linn.*—Petit Deuil. *Buff.*—Cape Titmouse. *Latham.*

† Barrow, 323.

nostrils are open; the tongue is short, broad, and cloven: the tail, except in one species, is forked; and the wings are long. The legs are short, and (except in four species, in which they are all placed forwards) the toes are placed three before and one behind.

Swallows are easily distinguished from all other Birds, not only by their structure, but by their twittering voice, and their manner of life. They fly with great rapidity, seldom walk, and perform all their functions either on the wing or sitting. By means of their wide mouth they readily catch insects in the air, or on the surface of water, and on these it is that they entirely subsist.

Naturalists have been much divided in their opinions respecting the migration of the Swallow Tribe from this country. This is a subject into which, if we were to enter at length, we should not only occupy too many pages of our work, but should also trespass too much both on the time and patience of our readers: we shall therefore be very brief in our account of it.—

The Hon. Daines Barrington, and several other writers, have supposed that *Swallows* do not leave this country, but that they lay concealed, and in a state of torpidity, during winter, under water; that the *Martins* lay concealed during the same time in crevices of rocks and other lurking places above ground; that the *Sand Martins* remain in the holes in which they form their nests; and that the *Swifts* continue all winter in their holes in churches and old buildings.—That there have been many well-

authenticated instances of the Birds being found torpid in each of these situations, in this, and some other countries, cannot be denied. But a migration of the major part of these Birds is not to be contradicted, from what seems to be rather the effect of chance than design. Those Birds that have been late hatched, and have not acquired sufficient strength to accompany their companions in their journey, may have been such as to supply the above-mentioned instances. Were the whole of these species to remain, we should, undoubtedly, since their numbers are immense, be supplied with more numerous and more publicly authenticated instances than have hitherto been recorded. Mr. John Hunter, on dissecting several Swallows, observed in them nothing differing from other Birds in the organs of respiration, and immediately concluded, perhaps without considering the very respectable names that appear as witnesses in instances to the contrary, that it is highly absurd to suppose that *any* of them could remain for any long time under the water. That the actual migration of the Swallow Tribe does, however, take place, has been fully proved from a variety of well-attested facts, most of which have been taken from the observations of navigators who were eye-witnesses of their flights, and whose ships have sometimes afforded to them resting-places in their toilsome journies.

A single instance is recorded of some Swallows having, with warmth and care, been preserved alive through the winter, by a Mr. Pearson, of London,

who, on the 14th of February, 1786, exhibited them to the Society for promoting Natural History. They died from neglect in the following summer.

THE CHIMNEY SWALLOW.*

This Swallow is well known throughout England, where it takes up its residence during the summer months, and builds generally in the insides of our chimnies, a few feet from the top. Its nest is composed of mud mixed with straw and hair, and lined with feathers. It lays four or five eggs, and has two broods in the year.

The progressive method by which the young are introduced to their proper habits is very curious. They first, but not without some difficulty, emerge from the shaft: for a day or two they are fed on the chimney-top, and then are conducted to the dead leafless bough of some neighbouring tree, where, sitting in a row, they are attended by the parents with great assiduity. In a day or two after this they are strong enough to fly, but continue still unable to take their own food; they therefore play about near the place, where the dams are hawking for Flies; and, when a mouthful is collected, at a certain signal, the dam and the nestling advance, rising towards each other and meeting at an angle; the young all the while uttering such a little quick

* Synonyms.—Hirundo Rustica. *Linn.*—Hirondelle de Cheminee; ou, Hirondelle Domestique. *Buff.*—House or Chimney Swallow. *Penn.* ——*Bew. Birds, p.* 252.—*Penn. Brit. Zool. i. tab.* 56.

note of gratitude and complacency, that a person must have paid very little regard to the wonders of nature that has not remarked this action.

As soon as the dam has disengaged herself from the first brood, she immediately commences her preparations for a second, which is introduced into the world about the middle or latter end of August.

During every part of the summer the Swallow is a most instructive pattern of unwearied industry and affection; for from morning to night, while there is a family to be supported, she spends the whole time in skimming along and exerting the most sudden turns, and quick evolutions; avenues, and long walks under hedges, pasture-fields, and mown meadows where cattle graze, are their delight, especially if there are trees interspersed; because in such spots insects most abound. When a Fly is taken, a smart snap from their bill is to be heard, not unlike the noise of the shutting of a watch-case; but the motion of the mandibles is too quick for the eye.

The Swallow is the excubitor to the House-martins and other little Birds, announcing the approach of Birds of prey; for as soon as a Hawk or an Owl appears, he calls, with a shrill alarming note, all the Swallows and Martins about him, who pursue in a body, and buffet and strike their enemy till they have driven him from the place, darting down upon his back and rising in a perpendicular line in perfect security. This Bird will also sound the alarm and strike at Cats when they climb on the roofs of houses, or otherwise approach the nests.

Wonderful is the address, Mr. White justly ob-

serves, which this adroit Bird exhibits in ascending and descending with security through the narrow passage of a chimney. When hovering over the mouth of the funnel, the vibrations of its wings acting on the confined air occasion a rumbling like thunder. It is not improbable that the dam submits to the inconvenience of having her nest low down in the shaft, in order to have her brood secure from rapacious Birds, and particularly from Owls, which frequently fall down chimnies, most probably in their attempts to get at the nestlings.*

The Swallows are generally supposed to retire in the winter to Senegal, and some other parts of Africa. Dr. Russel says, that Swallows visit the country about Aleppo towards the end of February, where, like those in Europe, they breed. Having hatched their young they disappear about the end of July, and returning in the beginning of October, continue somewhat more than a fortnight, and then disappear till the spring.† They are found in almost all parts of the Old Continent, and are by no means uncommon in North America.

Professor Kalm, in his travels into America, says, that a very reputable lady and her children related to him the following story respecting these Birds, assuring him at the same time that they were all eye-witnesses to the fact:—"A couple of Swallows built their nest in the stable belonging to the lady; the female laid eggs in the nest, and was about to

* White's Selborne. † Russel's Aleppo.

brood them; some days after the people saw the female still sitting on the eggs, but the male, flying about the nest, and sometimes settling on a nail, was heard to utter a very plaintive note, which betrayed his uneasiness. On a nearer examination the female was found dead in the nest, and the people flung her away. The male then went to sit upon the eggs, but after being about two hours on them, and perhaps thinking the business too troublesome, he went out, and returned in the afternoon with another female, which sat upon the nest and afterwards fed the young ones till they were able to provide for themselves."*

At Camerton Hall, near Bath, a pair of Swallows built their nest on the upper part of the frame of an old picture, over the chimney, coming through a broken pane in the window of the room. They came three years successively, and in all probability would have continued to do so, had not the room been put into repair, which prevented their access to it.†

Another pair was known to build for two years together, on the handles of a pair of garden shears, that were stuck up against the boards in an outhouse, and therefore must have had her nest spoiled whenever the implement was wanted; and what is still more strange, another Bird of the same species built its nest on the wings and body of an owl, that happened by accident to hang dead and dry, from

* Kalm's Travels. † Barrington's Miscellanies, p. 239.

the rafter of a barn, and so loose as to be moved by every gust of wind. This owl, with the nest on its wings, and with eggs in the nest, were brought as a curiosity to the museum of Sir Ashton Lever. That gentleman, struck with the oddity of the sight, furnished the bringer with a large shell, or conch, desiring him to fix it just where the owl had hung. The person did as he was ordered, and the following year a pair, probably the same, built their nest in the conch, and laid their eggs.

The owl and the conch made a strange and grotesque appearance, and are now not the least curious specimens in that wonderful collection of art and nature, the Leverian Museum.

" By the myriads of insects," says a writer in the Gentleman's Magazine, " which every single brood of swallows destroys in the course of a summer, they defend us, in a great measure from the personal and domestic annoyance of Flies and Gnats; and what is of infinitely more consequence, they keep down the numbers of our minute enemies, which, either in the grub or winged state, would otherwise render the labours of the husbandman fruitless. Since then Swallows are guardians of our corn, they should every where be protected by the same popular veneration which in Egypt defends the Ibis, and the Stork in Holland. We more frequently hear of unproductive harvests on the Continent than in this country; and it is well known that Swallows are caught and sold as food, in the markets of Spain, France, and Italy. When this practice has been very general and successful,

I have little doubt that it has at times contributed to the scarcity of corn. In England we are not driven to such resources to furnish our tables. But what apology can be made for those, and many there are, whose education and rank should have taught them more innocent amusements, who wantonly murder Swallows under the idle pretence of improving their skill in shooting game. Setting aside the cruelty of starving whole nests, by killing the dam, they who follow this barbarous diversion, would do well to reflect, that by every Swallow they kill, they assist blasts, mildews, and vermin, in causing a scarcity of bread. Every lord of a manor should restrain his game-keeper from this execrable practice; nor should he permit any person to sport on his lands who does not refrain from it. For my part, I am not ashamed to own, that I have tempted martins to build round my house, by fixing scallop shells in places convenient for their pendent beds and procreant cradles, and have been much pleased in observing with what caution the little architect raises a buttress under each shell before he ventures to form his nest on it."

All the species have been observed to drink as they fly along, sipping the surface of the water; but the Swallow alone, in general, washes on the wing, by dropping into a pool for many times together. In very hot weather House martins, and Bank-martins, dip and wash a little.

This species feeds much on small Beetles, as well as on Gnats and Flies; and often settles on dug ground, or paths, for gravel, to grind and digest its

food. Horsemen, on wide downs, are often closely attended by a little party of Swallows, for miles together, which play before and behind them, sweeping around, and collecting all the skulking insects that are roused by the trampling of the horses' feet: when the wind blows hard, the Birds are, without this expedient, often forced to alight in order to pick up their lurking prey.

Mr. White informs us, that for some weeks before the Swallows depart, they, to a Bird, forsake houses and chimnies, and roost in trees; and they usually withdraw about the beginning of October, though some few stragglers may be seen at times till the first week in November. Mr. Pennant says, that for a few days previous to their departure, they assemble in vast flocks on house-tops, churches, and trees, from whence they take their flight.

We shall conclude our account of this bird, with an anecdote from M. Buffon: this celebrated writer informs us, that a shoemaker in Brasil, put a collar on a Swallow, containing an inscription to this purpose:

"Pretty Swallow, tell me, whither thou goest in winter?"

And in the ensuing spring received, by the same courier, the following answer:

"To Anthony at Athens;—why dost thou enquire?"

But the most probable part of this story is, that the answer was written by some one who had caught the bird in Switzerland; for both Belon and Aristotle assure us, that though the Swallows live half the

year in Greece, yet that they always pass the winter in Africa.

THE MARTIN.*

Of the manners and economy of these birds, we have the following curious account in the Reverend Mr. White's Natural History of Selborne. "They begin to appear about the 16th of April; and for some time they in general pay no attention to the business of nidification: they play and sport about, either to recruit from the fatigue of their journey, or else that their blood may recover its true tone and texture, after it has been so long benumbed by the severities of winter.

"About the middle of May, if the weather be fine, the Martin begins to think in earnest of providing a mansion for its family. The crust or shell of its nest seems to be formed of such dirt or loam as comes most readily to hand, and is tempered and wrought together with little bits of broken straws, to render it tough and tenacious.

"As this Bird often builds against a perpendicular wall, without any projecting ledge under, it requires its utmost efforts to get the first foundation firmly fixed, so that it may safely carry the superstructure. On this occasion the Bird not only clings with its claws, but partly supports itself by strongly

* Synonyms.—Hirundo Urbica. *Linn.*—Hirondelle à Croupion blanc ou de fenêtre, *Buff.*—Martin, Martlet, Martinet, *Willughby.*—Window Swallow. *Bewick.*—House Martin. *Montagu.*——*Bew. Birds*, p. 255.

inclining its tail against the wall, making that a fulcrum; and thus fixed, it works and plasters the materials into the face of the brick or stone. But then, that this work may not, while it is soft, pull itself down by its own weight, the provident architect has prudence and forbearance enough not to advance her work too fast; but by building only in the morning, and by dedicating the rest of the day to food and amusement, gives it sufficient time to dry and harden. About half an inch seems to be a sufficient layer for a day. Thus careful workmen, when they build mud-walls, (informed at first, perhaps, by this little bird), raise but a moderate layer at a time, and then desist, lest the work should become top-heavy, and so be ruined by its own weight. By this method, in about ten or twelve days, is formed an hemispherical nest, with a small aperture towards the top, strong, compact, and warm; and perfectly fitted for all the purposes for which it was intended. But then nothing is more common than for the House-sparrow, as soon as the shell is finished, to seize on it as its own, to eject the owner, and to line it after its own manner. After so much labour is bestowed in erecting a mansion, as Nature seldom works in vain, Martins will breed on for several years together in the same nest, where it happens to be well sheltered and secure from the injuries of the weather. The shell or crust of the nest is a sort of rustic work, full of knobs and protuberances on the outside: nor is the inside of those that I have examined smoothed with any exactness at all; but is rendered soft and warm,

and fit for incubation, by a lining of small straws, grasses, and feathers; and sometimes by a bed of moss interwoven with wool."

In this nest are produced four or five young, which, when arrived at full growth, soon become impatient of confinement, and sit all day with their heads out at the orifice, where the dams, by clinging to the nest, supply them with food from morning to night. After this they are fed by the parents on the wing; but this feat is performed by so quick and almost imperceptible a flight, that a person must attend very exactly to the motions of the Birds, before he is able to perceive it.

As soon as the young are able to provide for themselves, the dams repair their nests for a second brood. The first flight then associate in vast flocks, and may be seen on sunny mornings and evenings, clustering and hovering round towers and steeples, and on the roofs of churches and houses. These congregatings usually begin to take place about the first week in August. From observing the Birds approaching and playing about the eaves of buildings, many persons have been led to suppose that more than two old birds attended on each nest.

The Martins are often very capricious in fixing on a nesting-place, beginning many edifices, and leaving them unfinished; but when a nest has been once completed in a sheltered situation, it is made to serve for several seasons. In forming their nests these industrious artificers are at their labour, in the long days, before four o'clock in the morning: in fixing their materials they plaster them on with

their chins, moving their heads with a quick, vibratory motion.

Sometimes in very hot weather they dip and wash as they fly, but not so frequently as the Swallows. They are the least agile of all the British hirundines; their wings and tails are short, and therefore they are not capable of those surprising turns, and quick and glancing evolutions, that are so very observable in the Chimney Swallows.

Their motion is placid and easy, generally in the middle region of the air, for they seldom mount to any great height, and never sweep long together over the surface of the ground or water. They do not wander far for food; but are fond of sheltered places near some lake, or under some hanging wood, or hollow vale, especially in windy weather.

They breed the latest of all our Swallows, never being without unfledged young even so late as Michaelmas.

As the summer declines, the congregating flocks increase in number every day from the accession of the second broods, till at length, round the villages on the Thames, they swarm in myriads upon myriads, darkening even the face of the sky as they frequent the aits of that river, where they roost. The bulk of them retire, in vast flocks, about the beginning of October; but some have been known to remain so late as till the sixth of November; they withdraw later than any of the other species. It should seem that either these are very short-lived Birds, or that they undergo vast devastations in their absence, or do not return to the districts

where they were bred, for the Birds that appear in the spring, bear no kind of proportion to those that retire.*

In order to prove that animals have some power of communicating ideas, and expressing their intention to each other, father Bougeant has, among others, related one very singular incident:—"A Sparrow finding a nest that a Martin had just built, standing very conveniently for him, possessed himself of it. The Martin seeing the usurper in her house, called for help to expel him. A thousand Martins came full speed, and attacked the Sparrow; but the latter, being covered on every side, and presenting only his large beak at the entrance of the nest, was invulnerable, and made the boldest of those who dared approach him repent of their temerity. After a quarter of an hour's combat, all the Martins disappeared. The Sparrow thought he had got the better, and the spectators judged that the Martins had abandoned their undertaking. Not in the least. Immediately they returned to the charge; and each of them having procured a little of that tempered earth with which they make their nests, they all at once fell upon the Sparrow, and inclosed him in the nest, to perish there, though they could not drive him thence. Can it (he concludes, from this fact) be imagined that the Martins could have been able to concert this design, all of them together, without speaking

* White's Selborne.

to each other, or without some medium of communication equivalent to that of language?*

During the residence of a Mr. Simpson, at Welton in North America, he one morning heard a noise from a couple of Martins that were flying from tree to tree near his dwelling. They made several attempts to get into a box or cage fixed against the house, which they had before occupied; but they always appeared to fly from it with the utmost dread, at the same time repeating those loud cries which first drew his attention. Curiosity led this gentleman to watch their motions. After some time a small Wren† came from the box, and perched on a tree near it, when her shrill notes seemed to amaze her antagonists. After some time she flew away. The Martins took this opportunity of returning to the cage; but their stay was short. Their diminutive adversary returned, and made them fly with the greatest precipitation. They continued manœuvering in this way the whole day; but the following morning, on the Wren's quitting the cage, the Martins immediately returned, took possession of their mansion, broke up their own nest, went to work afresh with extreme industry and ingenuity, and soon barricaded their doors. The Wren returned, but could not re-enter. She made attempts to storm the works, but did not succeed. The Martins, abstaining from food for near two days, persevered during the whole of that time in

* This story appears to be taken from Albertus Magnus, whose authority is not always to be trusted.

† Probably Certhia Familiaris of Linnæus.

defending the entrance within the barricado: and the Wren, finding she could not force an entry, razed the siege, quitted her intentions, and left the Martins in quiet possession of their nest.*

THE SAND-MARTIN.†

The Sand-martin is about four inches and three quarters in length. It is common about the banks of rivers and sand-pits, where it digs itself a round and regular hole in the sand or earth: this is horizontal, serpentine, and generally about two feet deep. At the far end of this burrow, the Bird deposits her rude nest, of grass and feathers. "Though one would at first be disinclined to believe (says Mr. White) that this weak Bird, with her soft and tender bill and claws, should ever be able to bore the stubborn sand-bank without entirely disabling herself, yet with these feeble instruments have I seen a pair of them make great dispatch; and could remark how much they had scooped in a day by the fresh sand which ran down the bank, and was of a different colour from that which lay loose and was bleached in the sun. In what space of time these little artists are able to mine and finish these cavities, I have never been able to discover; but it would be a matter worthy of observation, where it falls in the way of any naturalist to make his remarks. This

* American Medical Repository.

† SYNONYMS.—Hirundo Riparia. *Linn.*—Hirondelle de Rivage. *Buf.*—Sand Martin, or Shore Bird. *Willughby.*—Bank Martin, or Sand Swallow. *Bewick.*——*Bew. Birds, p*, 258.

I have often taken notice of, that several holes of different depths are left unfinished at the end of the summer. To imagine that these beginnings were intentionally made, in order to be in the greater forwardness for next spring, is allowing perhaps too much foresight to a simple Bird. May not the cause of these being left unfinished arise from the Birds meeting in those places with strata too harsh, hard, and solid, for their purpose, which they relinquish, and go to a fresh spot that works more freely? Or may they not in other places fall in with a soil as much too loose and mouldering, liable to flounder, and threatening to overwhelm them and their labours? One thing is remarkable—that, after some years, the old holes are forsaken and new ones bored; perhaps because the old habitations were become foul and fetid from the long use, or because they might so abound with Fleas as to become untenable." This species is so strangely annoyed with Fleas, that these have been sometimes seen swarming at the mouths of their holes, like Bees on the stools of their hives.

The Sand-martin arrives in this country about the same time as the Swallow, and lays from four to six white and transparent eggs.

These Birds seem not to be of a very sociable turn, never with us congregating in the autumn. They have a peculiar manner of flying: flitting about with odd jerks and vacillations, not unlike the motions of a Butterfly.*

* White's Selborne.

THE PURPLE SWIFT.*

The Purple Swift is not quite eight inches in length. Its bill is black, and its plumage of a deep and very glossy violet. The tail is forked, and the legs and claws are blackish. The colour of the female is a dusky brown.

By the self-interest of mankind these Birds, which are inhabitants of some parts of North America, are, like the Creeper†, made welcome guests, and provided with lodgings, in earthen pots or boxes, placed on the outsides of the houses, against their arrival (being migratory) and sometimes with empty calabashes hung on the tops of poles: in these they make their nests. In return for the benefits thus received they are the guardians of the poultry, driving away and pursuing with great noise and violence Crows, Hawks, and all kinds of vermin. On the approach of any thing noxious they set up a loud scream, which the Chickens consider as a note of alarm, and instantly run under shelter.

THE ESCULENT SWALLOW.‡

The Esculent Swallow is said to be less in size than the Wren. The bill is thick: the upper parts of the body are brown, and the under parts whitish. The tail is forked, and each feather is tipped with white. The legs are brown.

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* SYNONYMS.—Hirundo Purpurea. *Linn.*—Purple Martin. *Catesby.*—Purple Swallow. *Latham.*—Purple Swift. *Penn.*

† Certhia Familiaris of Linnæus.

‡ SYNONYMS.—Hirundo Esculenta. *Linn.*—Salangane. *Buff.*—Esculent Swallow. *Lath.*

The nest of this Bird is exceedingly curious, and composed of such materials that it is not only edible, but is accounted among the greatest dainties that the Asiatic epicures possess. It generally weighs about half an ounce; and is in shape like half a lemon, or, as some say, like a saucer, with one side flatted, which adheres to the rock. The texture is somewhat like isinglass, or rather more like fine gum-dragon; and the several layers of the matter it is composed of are very apparent; being fabricated from repeated parcels of a soft slimy substance, in the same manner as the Martins form theirs of mud. Authors differ much as to the materials of which it is composed: some suppose it to consist of Sea-worms of the *Mollusca* class; others of the Sea-qualm (a kind of Cuttle-fish) or a glutinous sea-plant called *Agal-agal*. It has also been supposed that the Swallows rob other Birds of their eggs, and, after breaking the shells, apply the white of them for that purpose.

The best sort of nests, which are perfectly free from dirt, are dissolved in broths, in order to thicken them; and are said to give them an exquisite flavour. They are soaked in water to soften, then pulled to pieces, and, after being mixed with *ginseng*, are put into the body of a fowl. The whole is then stewed in a pot, with a sufficient quantity of water, and left on the coals all night. The morning following it is ready to be eaten.

These nests are found in vast numbers in certain caverns in various islands in the Soolo Archipelago. The best kind sell in China from One Thousand

to Fifteen Hundred dollars the *picle*;* the black and dirty ones for only twenty dollars. It is said that the Dutch alone export from Batavia, one thousand *picles* of these nests every year, which are brought from the islands of Cochin-China, and those lying east of them. It is much to be wondered, that among other luxuries imported by us from the east, these nests should not have found their way to our tables; but as yet they are so scarce in England as to be kept as rarities in the cabinets of collectors.

The following is the account given of these nests by Sir George Staunton:† "In the Cass (a small island near Sumatra) were found two caverns, running horizontally into the side of the rock; and in these were a number of those Birds'-nests so much prized by the Chinese epicures. They seemed to be composed of fine filaments, cemented together by a transparent viscous matter, not unlike what is left, by the foam of the sea, upon stones alternately covered by the tide, or those gelatinous animal substances found floating on every coast. The nests adhere to each other, and to the sides of the cavern, mostly in rows, without any break or interruption. The Birds that build these nests are small Grey Swallows, with bellies of a dirty white. They were flying about in considerable numbers; but they were so small, and their flight was so quick, that they escaped the shot fired at them. The same nests are said also to be found in deep caverns at the foot of the highest mountains in the middle of Java,

* About twenty-five pounds.—† In his account of the Embassy to China.

and at a distance from the sea, from which it is thought that the Birds derive no materials, either for their food, or the construction of their nests; as it does not appear probable they should fly, in search of either, over the intermediate mountains, which are very high, or against the boisterous winds prevailing thereabouts. They feed on insects, which they find hovering over stagnated pools between the mountains, and for the catching of which their wide opening beaks are particularly adapted. They prepare their nests from the best remnants of their food. Their greatest enemy is the Kite, who often intercepts them in their passage to and from the caverns, which are generally surrounded with rocks of grey limestone, or white marble. The nests are placed in horizontal rows, at different depths, from fifty to five hundred feet. The colour and value of the nests depend on the quantity and quality of the insects caught, and, perhaps, also on the situation where they are built. Their value is chiefly determined by the uniform fineness and delicacy of their texture; those that are white and transparent being most esteemed, and fetching often in China their weight in silver.

"These nests are a considerable object of traffic among the Javanese; and many are employed in it from their infancy. The Birds having spent near two months in preparing their nests, lay each two eggs, which are hatched in about fifteen days. When the young Birds become fledged, it is thought time to seize upon their nests, which is done regularly three times a year, and is effected by means of ladders of bamboo and reeds, by which the people descend into the caverns; but when these are very deep, rope lad-

ders are preferred. This operation is attended with much danger; and several break their necks in the attempt. The inhabitants of the mountains generally employed in it, begin always by sacrificing a Buffalo; which custom is constantly observed by the Javanese on the eve of every extraordinary enterprise. They also pronounce some prayers, anoint themselves with sweet-scented oil, and smoke the entrance of the cavern with gum-benjamin. Near some of those caverns a tutelar goddess is worshipped, whose priest burns incense, and lays his protecting hands on every person preparing to descend. A flambeau is carefully prepared at the same time, with a gum which exudes from a tree growing in the vicinity, and is not easily extinguished by fixed air or subterraneous vapours."

THE BLACK MARTIN, OR SWIFT.*

The Swift is a large species, being often near eight inches long, with an extent of wing near eighteen inches, though the whole weight of the Bird is not more than an ounce. The feet are so small, that the actions of walking and rising from the ground seem very difficult; nature has, however, made the Bird full amends, by furnishing it with ample means for an easy and continual flight. It is more on the wing than any other Swallow, and its flight is more rapid. It breeds under the eaves of houses, in steeples, and other lofty buildings; and makes its nest of grass and feathers.

The feet of this Swallow are of a particular struc-

* SYNONYMS.—Hirundo Apus. *Linn.*—Martinet Noir. *Buff.*—Black Martin or Swift. *Willughby.*—Deviling. *Bewick.*——*Bew. Birds, p.* 259.

ture, all the toes standing forward. The least toes consist only of one bone; the others of two each; in which they differ from the toes of all other Birds: this is, however, a construction nicely adapted to the purposes in which the feet of these Birds are employed.

The Swift visits us the latest, and leaves us the soonest of any of the tribe: it does not often arrive before the beginning of May, and seldom remains later than the middle of August.

It is the most active of all Birds, being on the wing, in the height of summer, at least sixteen hours in the day, withdrawing to rest, in the longest days, about a quarter before nine in the evening, some time after all the other day-birds are gone. Just before they retire, large groups of them assemble high in the air, and scream, and shoot about with wonderful rapidity. This Bird is, however, never so alert as in sultry lowering weather, when it expresses great alacrity and calls forth all its powers.

In hot mornings the Swifts get together in little parties, and dash round the steeples and churches, squeaking as they go in a very clamorous manner. These are supposed to be the males, serenading the sitting hens, for they seldom squeak till they come close to the walls or eaves, and those within always utter in return a little inward note of complacency. When the hen has been occupied all the day in sitting, she rushes forth, just before it is dark, to stretch and relieve her weary limbs; she snatches a scanty meal for a few minutes, and then returns to her duty of incubation.

Swifts, when cruelly shot, while they have young, discover a little lump of insects in their mouths, which

they pouch and hold under their tongue. In general they fly and feed higher in the air than the other species: they also range to vast distances, for loco-motion is no labour to them, endowed as they are with such wonderful powers of wing. Sometimes in the summer they may, however, be observed hawking very low, for hours together, over pools and streams, for the Cadew-flies, May-flies, and Dragon-flies,* that frequent the banks and surface of waters, which afford them a plentiful and succulent nourishment.

Sometimes they pursue and strike at Birds of prey when they are sailing about in the air; but they do not express so much vehemence and fury on these occasions as the Swallows.

Swifts differ from all the other British hirundines, in breeding but once in the summer, and in producing no more than two young ones at a time.

The main body of these Birds retire from this country before the middle of August, generally by the tenth, which is but a short time after the flight of their young, and not even a single straggler is to be seen on the twentieth. This early retreat is mysterious and wonderful, since that time is often the most delightful in the year. But what is more extraordinary, they begin to retire still earlier in the most southerly parts of Andalusia, where they can by no means be influenced by any defect of heat; or even, as one would suppose, by any defect of food. This is one of those incidents in natural history, that not only baffles our researches, but eludes all our guesses.

In the month of February 1766, a pair of these Birds were found adhering by their claws, and in a

* Phryganeæ, Ephemeræ, and Libellulæ of Linnæus.

torpid state, under the roof of Longnor Chapel, in Shropshire; and, on being brought to the fire, they revived, and moved about the room.

The voice of the Swift is a harsh scream, and yet there are few ears to which it is not pleasing, from an agreeable association of ideas, since it never occurs but in the most lovely summer weather. These Birds never settle on the ground but through accident, from the difficulty they have in walking, or rather as it may be called, in crawling; but they have a strong grasp with their feet, by which they readily cling to walls and other places that they frequent. Their bodies being flat, they can enter a very narrow crevice; and where they cannot pass on their bellies, they will turn up edgewise to push themselves through.*

THE PIGEON TRIBE.

The Pigeons constitute a tribe that forms a connecting link betwixt the Passerine Birds, and the Poultry: They are much dispersed over the world, some of the species being found even in the arctic regions. Their principal food is grain: they drink much, and not at intervals like other Birds, but by a continued draught, like the quadrupeds. During the breeding time they associate in pairs, and pay court to each other with their bills. The female lays two eggs, and the young that are produced are for the most part a male and a female. The parent Birds divide the labour of incubation by sitting on the eggs in turns: they also

* White's Selborne.

assist each other in feeding the young, and in this act they throw up the food from their own stomach, which has there become softened, and fitted for digestion in the more tender stomachs of the young. For the support of these, when just hatched, they throw up from their craws, along with the half digested food, a kind of curd, secreted from every part, analogous to the milk in quadrupeds. They produce several times in a year. Their voice is plaintive and mournful.

Their bill is weak, slender, straight at the base, with a soft protuberance, in which the nostrils are lodged. The tongue is entire. The legs are short, and in most of the species red; and the toes are divided to the origin.

THE WILD PIGEON*.

This Bird, from being the parent stock whence all the varieties of the Domestic-pigeon are derived, is often called the Stock-dove. It is still found in many parts of our island in a state of nature, forming its nest in holes of rocks, and old towers, and in the hollows of trees; but never, like the Ring-dove, on the boughs of trees.

Multitudes of Wild-pigeons visit us in the winter, from their more northerly summer retreats, appearing about November, and again retiring, except a few that breed with us, in the spring While the beech woods were suffered to cover large tracts of ground, they used to haunt them in *myriads*, frequently ex-

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SYNONYMS — Columba Oenas. *Linn.*—Stock-dove.—*Penn.*—Rockier—*Montagu.*——*Bew. Birds, p.* 267.

tending above a mile in length as they went out in a morning to feed.

In a state of domestication these birds are rendered of very material service. They frequently breed eight or nine times in a year; and though only two eggs are laid at a time, their increase is so prodigious, that at the expiration of four years, the produce of a single pair may amount to the immense number of near fifteen thousand.

The usual way to entice Pigeons to remain where they are intended, is, to place what is called a *salt-eat* near them; this is composed of loam, old rubbish, and salt, and will so effectually answer the purpose as to decoy those from other places: it is on this account held illegal.

We have a singular anecdote related of the effect of music on a Pigeon, by Mr. John Lockman, in some reflections concerning operas, prefixed to his Musical Drama of Roselinda. This person being at the house of Mr. Lee, a gentleman who lived in Cheshire, whose daughter was a fine performer on the harpsichord, he observed a Pigeon, which, whenever the young lady played the song of "Speri si," in Handel's opera of Admetus, and this only, would descend from an adjacent dove-house, to the room-window where she sat, and listen to it apparently with the most pleasing emotions; and when the song was finished, it always returned immediately to the dove-house.

There are upwards of twenty varieties of the Domestic-pigeon; and of these the Carriers are the most justly celebrated. They obtained their name

from the circumstance of their conveying letters and small packets from one place to another.

It is from an attachment to their native place, and particularly to the place where they have brought up their young, that they are thus rendered useful to mankind. The bird is first brought from thence to the place from whence the information is intended to be carried; the letter is tied under its wing, and it is let loose. From this instant its flight is directed through the clouds, at an amazing height, to its home: by an instinct altogether inconceivable, it darts onward in a straight line to the very spot from whence it was taken; but how it should direct its flight so exactly will, most probably, ever remain unknown to us.

These Birds are not now rendered of the same use they were formerly, in carrying letters from governors in besieged cities to generals about to relieve them; from princes to their subjects, with tidings of some fortunate event; or from lovers to their mistresses with expressions of their passion. The only use we now see made of them, is to be let loose at Tyburn the moment the fatal cart is drawn away, to notify to distant friends the departure of the unhappy criminal.

The rapidity of their flight is very wonderful. Lithgow assures us that one of them will carry a letter from Babylon to Aleppo, which, to man, is usually made a thirty days journey, in forty-eight hours. —To measure their flight with some degree of exactness, a gentleman some years ago, on a trifling wager, sent a Carrier-pigeon from London by the coach to a friend at St. Edmund's-bury, and along with it a note, desiring that the Pigeon, two days after its ar-

rival there, might be thrown up precisely when the Town clock struck nine in the morning; this was accordingly done, and the Pigeon arrived in London, and flew into the Bull-inn, in Bishopsgate-street, at half an hour past eleven o'clock, of the same morning on which he had been thrown up at St. Edmund's-bury, having flown seventy-two miles in two hours and a half*.

The Carrier-pigeon is easily distinguished from the others, by a broad circle of naked white skin round the eyes, and by its dark blue or blackish colour.

THE RING DOVE†.

These are the largest of all the British Pigeons, (generally weighing about twenty ounces) and may at once be distinguished by their size from all the rest. They build on the branches of trees, generally preferring those of the pine. The nest is large and open, formed principally of dry sticks; and the eggs, which may be frequently seen through the bottom of the nest, are larger than those of the domestic pigeon.

The food of this, as well as of the other species, is principally confined to grain; but a neighbour of the Rev. Mr. White, of Selborne, shot a Ring-dove as it was returning from feeding, and going to roost, and when his wife had picked and drawn it, she found its craw stuffed with the most nice and tender tops of turnips. These she washed and boiled, and thus sate down to a choice and delicate plate of

* Annual Register for 1765.

† SYNONYMS.——Columba palumbus. *Linn.*—Le Pigeon Ramier. *Buff.*—Queest, Cushat, or Ring Dove. *Willughby.*—Ring Pigeon. *Latham.*—Wood Pigeon. *Montagu.*——*Bew. Birds, p.* 270.

greens, culled and provided in this extraordinary manner.

Hence we may see that granivorous Birds, when grain fails, can subsist on the leaves of vegetables. There is indeed reason to suppose, that they would not be long healthy without them, for Turkies, though corn-fed, delight in a variety of plants, such as cabbage, lettuce, endive, &c. and poultry pick much grass; while Geese live for months together on commons by grazing alone.

—— Nought is useless made;
—— on the barren heath
The shepherd tends his flock that daily crop
Their verdant dinner from the mossy turf
Sufficient; after them, the cackling goose,
Close grazer, finds wherewith to ease her wants.

Attempts have frequently been made to domesticate these birds, by hatching their eggs in dove-houses under the common Pigeon; but as soon as the young ones were able to fly, they always escaped to their proper haunts. Mr. Montagu was at considerable pains in endeavouring to domesticate them; and though he so far tamed them within doors, as to have them become exceedingly troublesome, yet he never could produce a breed, either by themselves, or with the tame Pigeon. Two bred up together with a male Pigeon, were so tame as to eat out of the hand; but as they shewed no signs of breeding in the spring, they were, in the month of June, suffered to take their liberty, by opening the window of the room in which they were confined. It was supposed, that the Pigeon might induce them to return to their usual

place of abode, either for food or to roost; but they from that moment returned to their natural habits, and nothing more was seen of them, although the Pigeon continued.—This gentleman bred up a curious assemblage of Birds here, which lived together in perfect amity; they were a common Pigeon, a Ring-dove, a White-owl, and a Sparrow-hawk, and the Ring-dove was master of the whole collection*.

About the beginning of winter the Ring-doves assemble in great flocks and leave off cooing. The multitudes thus collected during the winter is so disproportioned to what continue here the whole year, as to render it certain that much the greatest part of them quit the country in the spring. It is most probable that these go into Sweden and the adjoining countries to breed; and return from thence thus far southwards in autumn, unable to sustain the rigours of that climate in the winter months. They again begin to coo in March, soon after which those that are left among us commence their preparations for breeding.

THE CROWNED PIGEON†.

The head of the Crowned Pigeon is adorned with a most superb circular crest of feathers, standing erect, and composed of loose, unconnected webs, of a fine pale bluish ash colour. The eyes are lodged in a

* Moutagu, art. Dove-ring.

† SYNONYMS.—Columba Coronata. *Linn.*—Faisan Couronné des Indes. *Buff.*—Great Crowned Indian Pigeon. *Latham.*

shuttle-shaped band of black. The lesser coverts of the wings, and the upper part of the back are of a dark reddish purple: the first greater coverts are white, edged with red; and all the rest of the plumage is of the same colour as the crest.

This species is about the size of a common Turkey, and is confined to new Guinea, Pulo, and a few of the adjacent islands. It has all the manners of a Pigeon; billing, inflating his breast, and cooing: the noise of its cooing is, however, so loud as, at times, to resemble rather a bellowing. It is said that M. Bougainville's sailors were greatly alarmed on hearing this for the first time, in the wild and unfrequented spots of some of the islands on which they landed, as they supposed it to have proceeded from the savage cries of hostile and concealed natives.

The wings of the Crowned Pigeons are armed with an horny excrescence, with which they are able to strike a severe blow. They are easily rendered tame; and in the East Indies they are kept in court yards, as poultry. They have frequently been brought alive into Europe, where they are justly considered among the greatest ornaments of the menagerie: and one instance has occurred of a female laying eggs, but these were, however, unproductive. In a wild state they breed on the highest trees.*

THE PASSENGER PIGEON†

Is about the size of the Common Pigeon. Its bill is black: round the eyes is a crimson mark; and the head,

* Pennant's Outlines, iv. 218.

† SYNONYMS.—Columba Migratoria. *Linn.*—Pigeon de Passage. *Buff.*—Pigeon of Passage. *Catesby.*—Passenger, or Migratory Pigeon. *Penn.*

throat, and upper parts of the body are ash-coloured. The sides of the neck are of a glossy, variable purple: the fore part of the neck and breast are vinaceous; and the under parts are the same, but paler. The tail is pretty long: the legs are red, and the claws black.

The Passenger Pigeons visit the different parts of North America, in enormous flocks. In the southern provinces their numbers depend greatly on the mildness or severity of the season, for in very mild weather few or none of them are to be seen. Actuated by necessity, they change their situations in search of acorns, mast, and berries, which the warmer provinces yield in vast abundance. When they alight, the ground is quickly cleared of all esculent fruits, to the great loss of the hog, and other mast-eating animals. When they have devoured every thing that has fallen on the surface, they form themselves into a great perpendicular column, and fly round the boughs of trees, from top to bottom, beating down the acorns with their wings, and they then, in succession, alight on the earth and eat.*

"I think," said Mr. Blackburne, in a letter to Mr. Pennant, "that these are as remarkable Birds as any in America. They are in vast numbers in all parts, and have been of great service, at particular times, to our garrisons, in supplying them with fresh meat, especially at the out-posts. A friend told me, that in the year in which Quebec was taken, the whole army was supplied with them, if they chose it. The way was this, every man took his club, (for they were forbid to use their firelocks), when they *flew*,

* Du Pratz, 279.

as it was termed, in such quantities that each person could kill as many as he wanted. They in general begin to fly soon after day-break, and continue till nine or ten o'clock; and again about three in the afternoon, and continue till five or six: but what is very remarkable, they always fly westerly. The times of flying here are in the spring, about the latter end of February, or the beginning of March, and they continue every day for eight or ten days; and again in the fall, when they begin at the latter end of July, or the beginning of August. The inhabitants catch vast quantities of them in clap-nets, with stale Pigeons. I have seen them brought to the market at New York by sacksfull. People in general are very fond of them, and I have heard many say, they think them as good as our Common Blue Pigeon; but I cannot agree with them by any means; they taste more like our Queest, or Wild Pigeon, but are better meat. Sir William Johnston told me, that at one shot, with a blunderbuss, he killed a *hundred and twenty or thirty.*

" I must remark one singular fact, that notwithstanding the whole people of a town go out a *pigeoning*, as they call it, they will not, on some days, kill a single hen bird; and on the very next day, not a single cock, (and yet both sexes always fly westerly); and when this is the case, the people are always assured that there will be a great quantity of them that season.*"

They were so numerous when La Hontan was in Canada, that the bishop had, he says, been compelled

* Penn. Arct. Zool. ii. p. i.

more than once to exorcise them, on account of the damage they committed. Many of the trees were said to have had more Pigeons on them in this migration than leaves; and for eighteen or twenty days it was supposed sufficient might have been killed to sustain a thousand men*.

Mr. Weld, who very lately travelled through the States of North America, informs us that a gentleman of the town of Niagara assured him that once as he was embarking there on board a ship for Toranto, a flight of them was observed coming from that quarter; that as he sailed over the lake Ontario to Toranto, forty miles distant from Niagara, Pigeons were seen flying over head the whole way in a contrary direction to that in which the ship proceeded; and that on his arriving at the place of his destination the birds were still observed coming down from the north in as large bodies as had been noticed at any one time during the whole voyage. Supposing therefore that the Pigeons moved no faster than the vessel, the flight, according to this gentleman's account, must have extended at least eighty miles †.

During their migrations these Pigeons are very fat. It is a singular fact that Mr. St. John found in the craw of one of them some undigested rice, for the nearest rice-fields were at least 560 miles from his habitation. He naturally concluded that either they must fly with the celerity of the wind, or else that digestion

* La Hontan, i. 61. † Travels in North America.

must be in a great measure suspended during their flight*.

The Indians often watch their roosting-places; and, knocking them on the head in the night, bring them away by thousands. They preserve the oil, or fat; which they use instead of butter. There was formerly scarcely any little Indian town in the interior parts of Carolina where a hundred gallons of this oil might not be found†.

By the colonists they are generally caught in a net extended on the ground, to which they are allured by tamed Pigeons of their own species, that are blinded, and fastened to a long string. The short flights and repeated calls of the shackled birds never fail either to excite their curiosity or bring some of them down to attempt their relief; when they are immediately inclosed. Every farmer has a tamed Pigeon in a cage at his door all the year round, to be ready against the season of their flight‡.

M. du Pratz, when he was in America, placed under their roosting-trees vessels filled with flaming sulphur, the fumes of which brought them to the ground in immense numbers.

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* Letters of an American Farmer, 37.

† Penn. Arct. Zool. ii. 4.

‡ Hector St. John, 37.

THE TURKEYS*.

OF the present tribe there have been hitherto only two species discovered; one (which is that known in this country) in America, and the other in the more retired parts of India.

The bill in both is convex, short and strong. The head and neck, or throat, and sometimes all three, are covered with naked carunculated flesh, the skin of which is flaccid and membranaceous. The tail is broad, and the birds have the power of expanding it.

THE AMERICAN OR COMMON TURKEY†.

The Common Turkey is a native of North America, and was introduced from thence into England in the reign of Henry the Eighth. According to

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* The Linnean order of GALLINACEOUS BIRDS commences here.

In the PEACOCK genus we find nothing, except a beautiful plumage, that is either pleasing or deserving of attention. The species so well known in our country is a native of the East. Its voice is a loud and disgusting scream, and the damage it does to plants in our gardens is scarcely to be repaid by its elegant appearance there.

† SYNONYMS.—Meleagris gallopavo. *Linn.*—Dindon. *Buff.*—New England Wild Turkey. *Ray.*——*Brew. Birds, p.* 286.

Tusser's "Five hundred Pointes of good Husbandrie," it began about the year 1585 to form an article in our rural Christmas feasts:

> Beefe, mutton, and porke, shred pies of the best,
> Pig, veale, goose and capon, and *turkie* well drest,
> Cheese, apples and nuts, jolly carols to heare,
> As then in the countrie is counted good cheare.

The Turkey is one of the most difficult birds to rear of any that we have, and yet in its wild state it is found, in great plenty, in the forests of Canada that are covered with snow above three-fourths of the year.

The hunting of these birds forms one of the principal diversions of the natives of that country. When they have discovered the retreat of the Turkeys, which in general is near fields of nettles, being very partial to the seeds of these plants, or where there is plenty of any kind of grain, they take their dog, which is trained to the sport, and send him into the midst of the flock. The birds no sooner perceive their enemy than they run off at full speed, and with such swiftness that they leave the dog far behind: he follows nevertheless; and as they cannot go at full speed for any length of time, he at last forces them to take shelter in a tree, where they sit perfectly spent and fatigued, till the hunters come up, and with long poles knock them down one after another.

They are among themselves extremely furious, and yet against other animals they are generally weak and cowardly. The domestic cock often makes the Turkey keep at a distance; and

they seldom venture to attack him but with united force, when they rather oppress him by their weight than annoy him by their weapons. There have, however, occurred instances in which the Turkey Cock has not been found wanting in prowess:—a gentleman of New York had brought from a distance a large Turkey-Cock and Hen, and a pair of Bantams, which were given to him by a relation; and he put them into his yard with some other poultry. Some time after, as he was feeding them from the barn-door, a large hawk suddenly turned the corner of the barn and made a pitch at the Bantam hen: she immediately gave the alarm, by a noise which they generally make on such occasions; when the Turkey-cock, who was at the distance of about two yards, and no doubt understood the hawk's intentions, and the imminent danger of his old acquaintance, flew at the hawk with such violence, and gave him so severe a stroke with his spurs, as he was about to seize his prey, as to knock him from the hen to a considerable distance; and the timely aid of this faithful auxiliary completely saved the Bantam from being devoured*.

To this we can add another occurrence, though very different in its nature, of the gallantry of the Turkey-cock, which also affords a singular instance of deviation from instinct. In the month of May, 1798, a female Turkey belonging to a gentleman in Sweden was sitting upon eggs, and as the cock in her absence began to appear uneasy and dejected,

* American Medical Repository.

he was put into the place to her. He immediately sat down by the female, and it was soon found that he had taken some eggs from under her, which he covered very carefully. The eggs were put back, but he soon afterwards took them again. This induced the owner, by way of experiment, to have a nest made, and as many eggs put in as it was thought he could conveniently cover. The bird seemed highly pleased with this mark of confidence; he sat with great patience on the eggs, and was so attentive to the care of hatching them as scarcely to afford himself time to take the food necessary for his support. At the usual period twenty-eight young ones were produced; and the cock, who was in some measure the parent of this numerous offspring, appeared perplexed on seeing so many little animals picking around him, and requiring his care: it was however thought proper not to entrust him with the rearing of the brood, lest he should neglect them; they were therefore taken away, and reared by other means*.

The disposition of the female is in general much more mild and gentle than that of the male. When leading out her young brood to collect their food, though she is so large and apparently so powerful a bird, she gives them very little protection against the attacks of any rapacious animal that comes in her way. She rather warns them to shift for themselves than prepares to defend them. "I have heard a Turkey-hen, when at the head of her brood, (says

* New Transactions of the Academy of Sciences at Stockholm.

the abbé de la Pluche,) send forth the most hideous scream, without knowing as yet the cause: however, her young immediately when the warning was given skulked under the bushes, the grass, or whatever else seemed to offer shelter or protection. They even stretched themselves at their full length on the ground, and continued lying as motionless as if they were dead. In the mean time the mother, with her eyes directed upwards, continued her cries and screaming as before. On looking up to where she seemed to gaze, I discovered a black spot just under the clouds, but was unable at first to determine what it was: however, it soon appeared to be a bird of prey, though at first at too great a distance to be distinguished. I have seen one of these animals continue in this violent agitated state, and her whole brood pinned down as it were to the ground, for four hours together, whilst their formidable foe has taken his circuits, has mounted and hovered directly over their heads: at last, upon disappearing, the parent began to change her note, and send forth another cry, which in an instant gave life to the whole trembling tribe, and they all flocked round her with expressions of pleasure, as if conscious of their happy escape from danger*."

It appears that in the wilds of America the Turkey grows to a much larger size than with us. Josselyn says, that he has eaten part of a Turkey-cock which, after it was plucked and the entrails were out, weighed thirty pounds†. Lawson, whose au-

* Buffon's Birds. † New England's Rarities, p. 8.

thority is unquestionable, saw half a Turkey serve eight hungry men for two meals, and says that he had seen others which he believed weighed forty pounds*. Some writers even assert that instances have occurred of Turkies weighing no less than sixty pounds.

The females lay their eggs in spring, generally in some retired and obscure place; for the cock, enraged at the loss of his mate while employed in hatching, is apt otherwise to break them. They sit on their eggs with so much perseverance, that, if not taken away, they will almost perish with hunger before they will entirely quit the nest. They are exceedingly affectionate to their young, and always moan their loss very greatly†.

Turkeys are bred in great numbers in Norfolk, Suffolk, and some other counties, from whence they are driven to the London markets in flocks of several hundreds each. The drivers manage them with great facility by means of a bit of red rag tied to the end of a long stick, which, from the antipathy these birds bear to that colour, acts as a scourge, and effectually answers the purpose.

Turkeys are remarkably fond of the seeds of nettles, and eat them with great voracity; but it has been found that those of the purple Fox-glove prove fatal to them.

In a wild state they are gregarious, and associate in flocks sometimes of five hundred. They frequent

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* Lawson's Carolina, p. 149 and 27.

† Phil. Tran. vol. lxxi. p. 67.

the great swamps of America to roost; but leave them at sun-rising to repair to the dry woods in search of acorns and berries. They perch on trees, and gain the height they wish by rising from bough to bough: they generally get to the summits of the loftiest trees, so high as to be even beyond musket shot *. They are very swift runners, but fly awkwardly; and about the month of March they become so fat that they cannot fly beyond three or four hundred yards, and are then easily run down by a horseman.

It is very seldom indeed that wild Turkeys are now seen in the inhabited parts of America; and they are only found, in any great numbers, in the distant and most unfrequented places.

If the eggs of these are hatched under tame Turkeys, the young are said still to retain a certain degree of wildness, and to perch separate from the others: ye they will mix and breed together in the season. The Indians sometimes use the breed produced from the wild birds to decoy those in a state of nature within their reach.

The Indians make an elegant clothing of the feathers: they twist the inner webs into a strong double string of hemp, or inner bark of the mulberry-tree, and work it like matting. This appears very rich and glossy, and as fine as silk shag. The natives of Louisiana make fans of the tail; and of four tails joined together the French used formerly to make a parasol †.

* Lawson, 45.

† Phil. Tran. vol. lxxi. p. 67.—Lawson, p. 18 and 149.—Du Pratz, p. 277.

THE PHEASANT TRIBE.

The characters of the present tribe are a short, convex, and strong bill. The head is more or less covered with carunculated bare flesh on the sides, which in some species is continued upwards to the crown, and beneath so as to hang pendent under each jaw. The legs, for the most part, are furnished with spurs.

The females produce many young at once; which they take care of for some time, going out with and pointing out food for them. They are at first clad with a thick, soft down. The nests are formed on the ground.

THE COMMON PHEASANT*.

The Pheasant can scarcely be said to be found in a state of nature in this country, although it is very common in almost all the southern parts of the old continent; it is not known in America.

The female will sometimes incubate in our woods if undisturbed by the male; but most of the birds that we have are brought up in confinement, the eggs being hatched under the domestic fowls, and the young, when at a proper age, being set at liberty. Pheasants bear confinement tolerably well, and in that state produce a great many eggs. Were it

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* Synonyms.—Phasianus colchicus. *Linn.*—Faisan. *Buff.* —*Bew. Birds, p.* 282.

not for the exertions of gentlemen of property in thus rearing and preserving them, it is more than probable that the breed would be extinct in this country in the course of a few years, in spite of all the severity of the game laws. The demand for them at the tables of the luxurious, and the easy mark they offer to the sportsman, would soon complete their destruction.

The Pheasant is a very stupid bird: on being roused it will frequently perch on some neighbouring tree, and it fixes its attention so much upon the dogs, as to suffer the sportsman to approach very near. On its perching it often crows, or makes a chuckling noise, by which the unfair sportsman is led to its destruction. The poacher catches them in nooses made of wire or twisted horse-hair, or even with a brier set in the same manner, at the verge of a wood; for they always run to feed in the adjacent fields morning and evening. They are also taken by means of a wire fastened to a long pole, when at roost in the night. They are sometimes suffocated and drop off the trees by fixing a bunch of lighted matches at the end of a pole, and holding it up under them. Foxes destroy great numbers of them.

These birds are found in most parts of England, but they are not plentiful in the north, and but seldom are seen in Scotland. Wood and corn lands seem necessary to their existence: they are partial to oak and beech woods, on the seed of which they feed: buckwheat is also one of their most favourite kinds of food. They chiefly frequent

the thickest and most impenetrable coverts of the woods, or such as have much long grass. In these coverts the female generally deposits her eggs, putting together a few surrounding dry vegetables for a nest, and laying from eight to twelve eggs.

In confinement the female sometimes assumes the elegant plumage of the male: but when this is the case she always becomes barren, and is spurned and buffeted by both sexes *.

THE DOMESTIC COCK †.

The Domestic Cock differs very widely from the wild descendants of its primitive stock, which are said to inhabit the forests of India, and most of the islands of the Indian seas.

His beautiful plumage and undaunted spirit, as well as his great utility, have rendered him a favourite in all countries where he has been introduced. His courage is scarcely to be subdued by the most powerful assailants; and though he die in the act, he will defend his females against enemies that are much stronger than himself.

"I have just witnessed (says M. de Buffon) a most odd scene. A sparrow-hawk alighted in a pretty populous court-yard: a young cock of this year's hatching instantly darted at him, and threw him on his back: in this situation the hawk, shield-

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* Montagu, art. Pheasant, common.

† Synonyms.—Phasianus Gallus. *Linn.*—Coq commun. *Buff.*——*Bew. Quad. p.* 276.

ing himself with his talons and his bill, intimidated the hens and turkeys, which screamed tumultuously round him. When he had a little recovered himself he rose and was taking wing; when the cock rushed upon him a second time, overturned him, and held him down so long that he was caught *."

The Cock is very attentive to his females, hardly ever losing sight of them. He leads, defends, and cherishes them, collects them together when they straggle, and seems to eat unwillingly till he sees them feeding around him. Whenever any strange Cock appears within his domain, he is immediately attacked, and if possible driven from the place.

His jealousy does not, however, seem to be altogether confined to his rivals, but it has been sometimes observed to extend even to his beloved female; and he appears capable of being actuated by revenge, founded on some degree of reasoning concerning her conjugal infidelity. Dr. Percival in his Dissertations relates an incident which happened not long ago at the seat of a gentleman near Berwick, that justifies this remark. "My mowers," says this gentleman, "cut a partridge on her nest, and immediately brought the eggs (fourteen) to the house. I ordered them to be put under a very large beautiful hen, and her own to be taken away. They were hatched in two days, and the hen brought them up perfectly well till they were five or six weeks old. During that time they were constantly kept confined in an outhouse, without having been seen by

* Buffon's Birds.

any of the other poultry. The door happening to be left open, the Cock got in. My housekeeper, hearing her hen in distress, ran to her assistance, but did not arrive in time to save her life. The Cock finding her with the brood of partridges fell upon her with the utmost fury, and put her to death. The housekeeper found him tearing her both with his beak and spurs, although she was then fluttering in the last agony, and incapable of any resistance. The hen had formerly been the Cock's greatest favourite."

The patience and perseverance of the hen in hatching are truly extraordinary. She covers her eggs with her wings, fosters them with a genial warmth, turning them and often changing their situations, that all their parts may receive an equal degree of heat. She seems to perceive the importance of her employment, and is so intent in her occupation as to neglect in some measure even the necessary supplies of food and drink. In about three weeks the young brood burst from their confinement; and while a mother, from the most cowardly and voracious she becomes in the protection of her young the most daring and abstemious of animals. If she casts her eyes on a grain of corn, a crumb of bread, or any thing, though ever so inconsiderable, that is capable of division, she will not touch the least portion of it; she gives her numerous train immediate notice of her success by a peculiar call, which they all understand. They flock in an instant around her, and the whole treasure is appropriated to their service. Though by nature timid, and apt to fly from the least

animal, yet when marching at the head of her little troop she is a heroine, is fearless of danger, and will fly in the face of even the fiercest mastiff.

The following instance of the sagacity of the hen is related by Mr. Smellie in his translation of Buffon's Natural History of Birds:—"A singular circumstance," says this writer, "lately came under my observation:—a brooding hen having perceived a hole made in one of her eggs, was filled with rage; but after her passion was somewhat abated, she deliberately closed up the wound with mud and feathers."

As the chickens reared by the hen bear no proportion to the eggs she produces, many artificial schemes of rearing have been attempted. The most successful, though by no means the most humane, is said to be where a capon is made to supply the place of a hen. He is rendered very tame, the feathers are plucked from his breast, and the bare parts are rubbed with nettles. The chickens are then put to him, and by their running under his breast with their soft and downy bodies his pain is so much allayed, and he feels so much comfort to his featherless breast, that he soon adopts them, feeding them like a hen, and assiduously performing all the functions of the tenderest parent.

Chickens have been long hatched in Egypt by means of *artificial heat*; but this is only now practised by the inhabitants of a single village called *Berme*, and by those who live at a little distance from it. Towards the beginning of autumn these persons spread themselves all over the country; and

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† Phil. Tran. vol. lxxi. p. 67.—Lawson, p. 18 and 149.—Du Pratz, p. 277.

could be placed with safety, exposed to the open air, in a courtyard.

As to the mode in which the young brood are fed, they are generally a whole day after being hatched before they take any food at all; and then a few crumbs of bread are given for a day or two, after which time they begin to pick up insects and grain for themselves. But in order to save the trouble of attending them, capons are taught to watch them in the same manner as hens. M. Reaumur says, that he has seen above 200 chickens at once, all led about and defended only by three or four capons. It is asserted that even cocks may be taught to perform this office; which they will continue to do all their lives afterwards.

The progress of the incubation of the chicken in the natural way is a subject too curious, and too interesting, to be passed over without notice. The hen has scarcely sat on the egg twelve hours, when some lineaments of the head and body of the chicken appear. The heart may be seen to beat at the end of the second day: it has at that time somewhat the form of a horseshoe, but no blood yet appears. At the end of two days two vesicles of blood are to be distinguished, the pulsation of which is very visible: one of these is the left ventricle, and the other the root of the great artery. At the fiftieth hour, one auricle of the heart appears, and resembles a noose folded down upon itself. The beating of the heart is first observed in the auricle, and afterwards in the ventricle. At the end of seventy hours the wings are distinguishable, and on the

head two bubbles are seen for the brain; one for the bill; and two others for the fore and hind part of the head. Towards the end of the fourth day, the two auricles, already visible, draw nearer to the heart than they did before. The liver appears towards the fifth day. At the end of a hundred and thirty-one hours the first voluntary motion is observed. At the end of seven hours more the lungs and stomach become visible; and four hours after this the intestines, the loins, and the upper jaw. At the hundred and forty-fourth hour, two ventricles are visible, and two drops of blood instead of the single one which was seen before. The seventh day the brain begins to have some consistence. At the hundred and ninetieth hour of incubation the bill opens, and the flesh appears in the breast; in four hours more the breast bone is seen; and in six after this the ribs appear forming from the back, and the bill is very visible, as well as the gall-bladder. The bill becomes green at the end of two hundred and thirty-six hours; and if the chicken is taken out of its coverings it evidently moves itself. The feathers begin to shoot out towards the two hundred and fortieth hour, and the skull becomes gristly. At the two hundred and sixty-fourth the eyes appear. At the two hundred and eighty-eighth the ribs are perfect. At the three hundred and thirty-first the spleen draws near the stomach, and the lungs to the chest. At the end of three hundred and fifty-five hours the bill frequently opens and shuts; and at the end of the eighteenth day the first cry of the chicken is heard. It afterwards gets more strength, and grows continually till

at length it is enabled to set itself free from its confinement.

In the whole of this process we must remark that every part appears exactly at its proper time: if, for example, the liver is formed on the fifth day, it is founded on the preceding situation of the chicken, and on the changes that were to follow. No part of the body could possibly appear either sooner or later without the whole embryo suffering; and each of the limbs becomes visible at the proper moment. This ordination, so wise and so invariable, is manifestly the work of a Supreme Being: but we must still more sensibly acknowledge his creative powers, when we consider altogether the manner in which the chicken is formed out of the parts which compose the egg. How astonishing it must appear to an observing mind, that in this there should be, at all, the principle of life of an animated being! That all the parts of an animal's body should be concealed in it, and require nothing but heat to unfold and quicken them! That the whole formation of the chicken should be so constant and regular! That, exactly at the same time, the same changes will take place in a great number of eggs! That the chicken when it is hatched is heavier than the egg was before! But even these are not all the wonders in the formation of the bird from the egg (for this instance will serve to illustrate the whole feathered tribes): there are others altogether hidden from our observation, and of which, from our very limited faculties, we must ever remain ignorant.

We cannot take leave of this animal without a

few observations on the savage diversion of cock-fighting, which even still continues, to the disgrace of a Christian nation, to be encouraged, not by the lowest and meanest merely, but even by some that are stationed in the highest ranks of society. The Shrove-Tuesday massacre of throwing at these unfortunate animals is, it is true, almost discontinued; but the cock-pit yet remains a reproach and disgrace to the characters of Englishmen. The refinements that have in this country taken place in the pitting of these courageous birds against each other would strike almost the rudest of the savage tribes of mankind with horror. The Battle-royal and the Welsh-main would scarcely be tolerated in any other country in the world. In the former an unlimited number of cocks is pitted, of which only the last surviving bird is accounted the victor. Thus, suppose there were at first sixteen pair of cocks, of these sixteen are killed; the remaining sixteen are pitted a second time; the eight conquerors of these are pitted a third time; the four conquerors a fourth time; and lastly, the two conquerors of these the fifth time: so that (incredible barbarity!) thirty-one cocks must be inhumanly murdered for the sport and pastime of men who bear the sacred name of Christians!

> Are these your sovereign joys, creation's lords?
> Is death a banquet for a godlike soul?

The tendency of this savage diversion may be readily deduced from numerous instances of malignant passions created by its pursuit. We shall relate

but one. Mr. Ardesoif of Tottenham, a young man of large fortune, was excessively fond of cock-fighting. He had a favourite cock that had won on many profitable matches; but for once losing he was so enraged, that he had the bird tied to a spit and roasted before a large fire. The screams of the miserable animal were so affecting, that some gentlemen who were present attempted to interfere: this enraged him further to such a degree that he seized a poker, and with the most furious vehemence declared, he would kill the first man who interposed; but in the midst of his asseverations he fell down senseless on the spot, and, on their taking him up, was found to be dead. Such we are assured were the circumstances that attended the death of this great pillar of humanity*!

The greatest rivals the English have in the art of cock-fighting are the inhabitants of Sumatra, and some other parts of the East. They indeed pay, perhaps, a greater attention to the training and feeding of these birds than we ever did, even when that diversion was at its height. They arm one of the legs only, not with a slender gaff as we do, but with a little implement in the form of a cimeter, with which the animals make most terrible destruction. The Sumatrians fight their cocks for vast sums: a man has been known to stake his wife or his children; a son his mother or sisters, on the issue of the battle. In disputed points four arbitra-

* Obituary to the Gentleman's Magazine for April 1789.—Mr. A. died on the fourth of April in this year.

tors are appointed, and if they cannot agree there is no appeal but to the sword. Some of them have a notion that their cocks are invulnerable: a father on his death-bed has, under this persuasion, been known to direct his son to lay his whole property on a certain bird, fully persuaded of consequent success*.

THE GROUS TRIBE.

The birds of this tribe have a strong convex bill, with (in some species) a naked, scarlet skin above each eye. The nostrils are small, in some hid in feathers, and in others covered above with a callous prominent rim. The tongue is pointed. The legs in some of the species are naked, and in others feathered to the toes.

THE RUFFED GROUS†.

The size of this bird is between that of a pheasant and a partridge. The bill is brownish. The head is crested; and, as well as all the upper parts, is variegated with different tints of brown mixed with black. The feathers on the neck are long and loose, and may be erected at pleasure like those of the cock. The throat and the fore part of the neck are orange

* Marsden, 234.—Penn. Outlines, ii. 270.

† Synonyms.——Tetrao umbellus. *Linn.*—Coq de bruyere à fraise. *Buff.*—Ruffed Heathcock. *Edwards.*—Ruffed Grous. *Latham.*

brown; and the rest of the under parts yellowish white, having a few curved marks on the breast and sides. The tail consists of eighteen feathers, all of which are crossed with narrow bars of black, and one broad band of the same near the end. The legs are covered to the toes (which are flesh-coloured, and pectinated on the sides) with whitish hairs.

The Ruffed Grous is a fine bird when his gaiety is displayed; that is, when he spreads his tail like that of a Turkey-cock, and erects the circle of feathers round his neck like a ruff, walking very stately with an even pace, and making a noise somewhat like a turkey; at which time the hunter must fire immediately at him, or he flies away directly two or three hundred yards before he settles on the ground. —There is something very remarkable in what we call the thumping of these birds. This they do, as the sportsmen tell us, with their wings, by clapping them against their sides. They stand upon an old fallen tree, that has lain many years on the ground, where they begin their strokes gradually, at about two seconds of time one from another, and repeat them quicker and quicker, until they make a noise not unlike distant thunder; which continues from the beginning about a minute; then ceasing for about six or eight minutes before it begins again. The sound is heard near half a mile; by which means the birds are often discovered by the sportsmen, and many of them killed. They commonly exercise their thumping during the spring and fall of the year, at bout nine or ten in the morning, and four or five in afternoon.

La Hontan speaking of this bird says, "I went with some Canadese on purpose to see it flap with its wings: believe me, this sight is one of the greatest curiosities in the world; for their flapping makes a noise much like a drum, for the space of a minute; then the noise ceases for half a quarter of an hour; after which it begins again. By this noise we were directed to the place where the birds sat, and found them upon rotten mossy trees. By flapping the wings they mean to call their mates; and the humming noise that ensues thereupon may be heard half a quarter of a league. This they do in the months of April, May, September and October; and, which is very remarkable, the Grous never flaps in this manner but upon one tree. It begins at break of day, and gives over at nine o'clock in the morning till about an hour before sun-set; then it flutters again, and continues to do so till night."

The history of these birds is thus further illustrated by Mr. Brooke of Maryland in North America. They lay their eggs, from twelve to sixteen in number, in nests which they make either by the side of fallen trees, or the roots of standing ones. I have found their nests when a boy, and have endeavoured to take the old bird, but never could succeed: she would almost let me put my hand upon her before she would quit her nest; then by artifice she would draw me off from her eggs, by fluttering just before me for a hundred paces or more; so that I have been in constant hopes of taking her. When the young are hatched and a few days old, they hide themselves

so artfully among the leaves, that it is difficult to find them *."

THE PTARMIGAN †.

The Ptarmigan is somewhat larger than a pigeon. The bill is black; and the plumage, in summer, pale brown elegantly mottled with small bars and dusky spots. The head and neck are marked with broad bars of black, rust-colour and white. The wings and belly are white.

These birds moult in the winter months, and change their summer dress for one more warm; and, instead of having their feathers of many colours, they then become white. By a wonderful providence every feather also, except those of the wings and tail, becomes double; a downy one shooting out of the base of each, which gives an additional protection against the cold. In the latter end of February the summer plumage begins to appear, first about the rump, in brown stumps, the first rudiments of the coat they assume in the warm season, when each feather is single ‡. In answer to inquiries made by sir Joseph Banks, Dr. Solander, and some other naturalists, to captain George Cartwright, who resided many years on the coast of Labrador, on the subject of the Grous changing their colour, he

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* Penn. Arct. Zool. i. 333.

† Synonyms.—Tetrao lagopus. *Linn.*—Lagopede. *Buff.*—White Game. *Willughby.*—Snicariper. *Scheffer.*—Snoripa, in Lapland. *Consett.*—Willow Partridge, about Hudson's Bay.—*Bew. Birds*, p. 303.—*Penn. Brit. Zool. i. tab.* 43.

‡ Penn. Arct. Zool. i. 360.

says, " I took particular notice of those I killed, and can aver, for a fact, that they get, at this time of the year, (September) a very large addition of feathers, all of which are white; and that the coloured feathers at the same time change to white. In spring, most of the white feathers drop off, and are succeeded by coloured ones: or, I rather believe, all the white ones drop off, and that they get an entire new set. At the two seasons they change very differently; in the spring beginning at the neck, and spreading from thence; now they begin on the belly, and end on the neck *."

Their feet being feathered entirely to the toes, are protected from the cold of the northern regions†. Every morning they take a flight directly upwards into the air, apparently to shake the snow from their wings and bodies. They feed in the mornings and evenings, and in the middle of the day bask in the sun.

About the beginning of October they assemble in flocks of a hundred and fifty or two hundred, and live much among the willows, the tops of which they eat. In December they retire from the flats about Hudson's Bay to the mountains, where in that month the snow is less deep than in the low lands, to feed on the mountain berries‡.

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* Cartwright's Labrador.

† Mr. Barrington says, that in summer both their legs and feet are rather bare of plumage; and that although in winter the feathers wrap very closely round the toes, yet none of them spring from beneath. *Phil. Tran.*

‡ Phil. Tran. vol. lxiii. p. 224.

Some of the Greenlanders believe that the Ptarmigans, in order to subsist through the winter, collect a store of berries in some cranny of a rock near their retreat. Others suppose that when they bury themselves in the snow, which they generally do, they receive the small degree of nourishment necessary in this situation from their craw, which they previously fill. This however is certainly untrue, for even during the winter they are frequently seen flying in great numbers about the rocks *.

Though found in the mountains of the north of Scotland, the Ptarmigans are chiefly inhabitants of that part of the globe which lies about the arctic circle. Their food consists of the buds of trees, young shoots of pine, heath, fruits and berries, which grow on the mountains. They are often met with in flocks, and are such stupid and silly birds as to suffer themselves without any difficulty to be knocked on the head, or to be driven into any snare that is set for them. They frequently stretch out their neck, apparently in curiosity, and remain otherwise unconcerned, whilst the fowler takes aim at them: when frightened they fly off, but immediately after alight, and stand staring at their foe. When the hen bird is killed, it is said that the male will not forsake her, but may then also be killed with great ease. So little alarmed are they at the presence of mankind as even to bear driving like poultry: yet notwithstanding this apparent gentleness of disposition, it is impossible to domesticate them, for

* Crantz, i. 76.

they refuse to eat when caught, and always die soon afterwards *.

Their voice is very extraordinary, and they do not often exert it but in the night. It is very rarely that the yare found in Denmark ; but by some accident one of these birds, some years ago, happened to stray within a hundred miles of Stockholm, which very much alarmed the common people of the neighbourhood: for from its nightly noise a report very soon was abroad that the wood where it took up its residence was haunted by a ghost. So much were they terrified by this dreadful sprite, that nothing could tempt the post-boys to pass the wood after dark. The spirit was, however, at last happily removed by some gentlemen sending their game-keepers into the wood by moonlight, who soon discovered and killed the harmless Ptarmigan †.

Ptarmigans form their nests on the ground in dry ridges, and lay from six to ten dusky eggs with reddish brown spots.

The usual method of taking these birds is in nets made of twine, twenty feet square, fastened to four poles, and propped with sticks in front. A long line is fastened to these, the end of which is held by a person who lies concealed at a distance. Several people then drive the birds within reach of the net, which is pulled down, and is often found to cover fifty or sixty of them. They are in such plenty in the northern parts of America that upwards of ten thousand are frequently taken for the use of the

* Crantz, i. 76. † Consett, 72.

Hudson's Bay Settlement betwixt November and May.

They are taken by the Laplanders by means of a hedge formed with the branches of birch-trees, and having small openings at certain intervals, with a snare in each. The birds are tempted to feed on the buds and catkins of the birch, and wherever they endeavour to pass through the openings they are instantly caught.

They are excellent food, being said to taste so like the Common Grous, as scarcely to be distinguished from it*.

THE PARTRIDGE†.

The Partridges pair early in the spring, and the female lays her eggs, from fifteen to eighteen in number, in a rude nest of dry leaves and grass upon the ground. The old birds, when near hatching, sit very close on their eggs; and a gentleman of veracity informed Mr. Montagu that he saw a Partridge taken with her eggs, on the point of hatching, and carried in a hat to some distance, where she continued to sit in confinement, and brought out her young. These are able to run as soon as they are hatched, which is at the end of about three weeks, and are at first frequently incumbered with part of the shell sticking to them: the parents immediately lead them to ant-hills, on the grubs of which insects they principally feed at first ‡.

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* Penn. Arct. Zool. i. 362.—Crantz, i. 76.—Scheffer.

† Synonyms.—Tetrao perdix. *Linn.*—Perdix grise. *Buff.*—*Bew. Birds*, p. 305. ‡ Montagu, art. Partridge.

The affection of the Partridge for her young is peculiarly strong and lively; and in rearing them she is assisted by her mate. They lead them out together, point out to them their proper food, and assist them in finding it by scratching the ground with their feet. They frequently sit close to each other, covering their young ones with their wings; and in this situation they are not easily roused: but should they be disturbed, there are few who are ignorant of the confusion that follows. The male gives the first signal of alarm by a peculiar cry of distress, throwing himself at the same moment more immediately into the way of danger, in order to mislead the enemy. He flies or rather runs along the ground, hanging his wings, and exhibiting every symptom of debility; by which the pursuer, in too eager an expectation of an easy prey, is decoyed to a distance, while the female conducts her brood from the place of danger before the enemy has had time to return from his pursuit.

"A hen Partridge," says Mr. White, who gives an instance of this instinctive sagacity, "came out of a ditch, and ran along shivering with her wings, and crying out as if wounded and unable to get from us: while the dam acted this distress, a boy who attended me saw the brood, which was small and unable to fly, run for shelter into an old fox's hole under the bank *."

That Partridges may be rendered quite tame we have proof from Willughby's Ornithology, who tells

* Naturalist's Calendar, 62.

us of a certain Sussex man that had, by his industry, made a covey of partridges so tame that he drove them before him, upon a wager, out of that county to London, though they were absolutely free and had their wings grown.

It has long been a received opinion among sportsmen as well as naturalists, that the female had none of the bay feathers on the breast like the male. This, however, has, on dissection, been proved a mistake: for, Mr. Montagu happening to kill nine birds in one day, with very little variation as to the bay marking on the breast, he was led to open them all, and discovered that five of them were females; and, by examining carefully the plumage, found that the male scould only be known by the superior brightness of colour about the head, which alone, after the first or second year, seems to be the mark of distinction*.

THE BUSTARD TRIBE.

THE Bustards have a somewhat convex bill, with open and oblong nostrils. The legs are long, and naked above the knees. The feet have only three toes, all placed forward.

There are about twelve different species, all of which are confined to the old continent.

* Montagu, art. Partridge.

THE GREAT BUSTARD.*

This is the largest land-fowl produced in our island, the male often weighing so much as twenty-five pounds and upwards. The length is near four feet, and the breadth nine. The head and neck are ash-coloured. The back is transversely barred with black and bright rust-colour. The belly is white: and the tail, consisting of twenty feathers, is barred with red and black. The legs are dusky. On each side of the lower mandible of the bill is a tuft of feathers about nine inches long.

The female is not much more than half the size of the male. The top of her head is of a deep orange, and the rest of the head brown. Her colours are not so bright as those of the male, and she wants the tuft on each side of the head. There is likewise another very essential difference between the male and the female; the former is furnished with a sac, or pouch, situated in the fore-part of the neck, and capable of containing above two quarts of water;† the entrance to it is immediately under the tongue. This singular reservoir was first discovered by Dr. Douglas, who supposes that the bird fills it with water to supply its thirst in the midst of those extensive plains where it is accustomed to wander; it likewise makes a further use of it in defending itself against the attacks of birds of prey; on these occasions it throws

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* SYNONYMS.—Otis tarda. *Linn.*—Outarde. *Buff.*—Bustard. *Willughby.*——*Bew. Birds, p.* 314.—*Penn. Brit. Zool. vol.* i. *tab.* 44.

† Some writers say *seven*.—Montague.

out the water with such violence, as not unfrequently to baffle the pursuit of its enemy.

This bird makes no nest, but the female lays her eggs in some hole in the ground, in a dry corn-field: these are two in number, as big as those of a Goose, and of a pale olive brown, marked with spots of a deeper colour. If, during her absence from the nest, any one handles, or even breathes upon the eggs, she immediately abandons them. The young follow the dam soon after they are excluded from the egg, but are not capable of flying for some time.

The Bustards are, we believe, confined to the old continent, and a few of its adjacent islands, and feed on green corn, the tops of turnips, and various other vegetables, as well as on Worms; but they have been known to eat Frogs, Mice, and young birds of the smaller kind, which they swallow whole. They are remarkable for their great timidity, carefully avoiding mankind, and being easily driven away in whole herds by the smallest dog.

In England they are now and then met with in flocks of fifty or more: they frequent the open countries of the south and east parts, from Dorsetshire as far as the wolds in Yorkshire, and are often seen on Salisbury Plain. They are slow in taking wing, but run with great rapidity; and the young ones are sometimes coursed and taken by greyhounds.

THE TRUMPETERS.

THIS singular tribe, of which only two species have been yet discovered, stands arranged even in Gmelin's edition of the Systema Naturæ, among the Birds of the next order, the *Waders*; but both in its formation and habits it differs so materially from the whole of that tribe, that we have not hesitated to follow the example of Dr. Latham, and place it here, where it seems with greatest propriety to stand.

The bill is moderately long, having the upper mandible a little convex. The nostrils are oblong, sunk, and pervious: the tongue is cartilaginous, flat, and fringed at the tip. The legs are naked a little above the knees: and the toes are placed three before and one behind.

THE GOLD-BREASTED TRUMPETER.*

This Bird inhabits the arid mountains and upland forests of some parts of South America. It is twenty-two inches in length, and its legs are five inches high, and completely covered with small scales, which reach two inches above the knee. Its general plumage is black; and the feathers of the head and neck are very short and downy; those of the fore-part of the neck, and upper part of the breast, of a very glossy gilded green, with a re-

* Synonyms.—Psophia Crepitans. *Linn.*—Caracara. *Buff.*

flection of blue in some lights. The feathers between the shoulders are rust-coloured, changing into a pale ash-colour as they pass downwards: they are loose and silky. Those of the scapulars are long, and hang over the tail, which is very short, and consists of twelve blackish feathers. The legs are greenish; and the bill is yellowish green, having the nostrils pervious.

The most characteristic and remarkable property of these Birds consists in the wonderful noise which they often make, either of their own accord, or when urged by their keepers. To induce them to make this noise, it is sometimes necessary to entice the Bird with a bit of bread to come near; and then making the same kind of noise, which the keepers can well imitate, the Bird will frequently be disposed to repeat it. This equivocal noise is sometimes preceded by a savage cry, interrupted by a sound approaching that of *scherck, scherck*, to which succeeds the hollow singular noise in question, which somewhat resembles the moan of Pigeons. In this way the bird utters five, six, or seven times, with precipitation, a hollow noise emitted from within its body, nearly as if one pronounced *tou, tou, tou, tou, tou, tou*, with the mouth shut, resting upon the last *tou* . . . . a very long time, and terminating by sinking gradually with the same note. It also much resembles the lengthened doleful noise which the Dutch bakers make, by blowing a glass trumpet, to inform their customers when the bread comes out of the oven. This odd sort of noise is probably owing to the extent of the Bird's lungs, and the capacity of their membranaceous cells: it

may probably be communicated through the muscles and teguments of its body, for there appears no proof that it proceeds from its mouth to the external air, which conveys the impulse to the ear.

This Bird, when tamed, distinguishes its master and benefactor with marks of affection.—"Having (says Vosmaër) reared one myself, I had an opportunity of experiencing this: When I opened its cage in the morning, the kind animal hopped round me, expanding both his wings, and *trumpeting*, as if he wished me good morning. He shewed no less attention when I went out and returned again; no sooner did he perceive me at a distance than he ran to meet me; and even when I happened to be in a boat, and set my foot on shore, he welcomed me with the same compliments, which he reserved for me alone, and never bestowed upon others."

The Trumpeter is easily tamed, and always becomes attached to its benefactor. When bred up in the house, it loads its master with caresses, and follows his motions; and if it conceives a dislike to persons on account of their forbidding figure, their offensive smell, or of injuries received, it will pursue them sometimes to a considerable distance, biting their legs, and testifying every mark of displeasure. It obeys the voice of its master, and even answers the call of those to whom it bears no grudge. It is fond of caresses, and offers its head and neck to be stroked; and if once accustomed to these familiarities, it becomes troublesome, and will not be satisfied without continual fondling. It makes its appearance as often as its master sits down to table, and begins with driving

out the Dogs and Cats, and taking possession of the room: for it is so obstinate and bold that it never yields, but often after a tough battle will put a middling-sized dog to flight. It avoids the bites of its antagonist by rising in the air, and retaliates with violent blows with its bill and nails, aimed chiefly at the eyes; and after it gains the superiority, it pursues the victory with the utmost rancour, and, if not parted, will destroy the fugitive. By its intercourse with man, its instincts become moulded like those of Dogs; and we are assured that it can be trained to attend a flock of sheep. It even shews a degree of jealousy of its rivals; for when at table it bites fiercely the naked legs of the Negroes and other domestics who come near its master.

Almost all the Birds have also a trick of following people through the streets, and out of town; even persons they have never seen before. It is difficult to get rid of them: if a person enters a house they will wait his return, and again join him, though after an interval of three hours. "I have sometimes (says M. de la Borde) betaken myself to my heels; but they ran faster, and always got before me, and when I stopped, they stopped also.—I know one that invariably follows all the strangers who enter its master's house, accompanies them into the garden, takes as many turns as they do, and attends them back again."*

In a state of nature this Bird, as we have already observed, inhabits the vast forests, in the warm cli-

* Note communicated to the Comte de Buffon.

mates of America; and it never visits the cleared grounds, still less the settlements. It associates in numerous flocks. It walks and runs rather than flies, since it never rises more than a few feet from the ground, and then only to reach some short distance, or to gain some low branch. It feeds on wild fruits, and, when surprised in its haunts, makes its escape by the swiftness of its feet, at the same time emitting a shrill cry, in sound not unlike that of a Turkey.

THE OSTRICH TRIBE.

IN the Ostriches the bill is straight and depressed. The wings are small in proportion to the size of the body, and altogether useless for flight. The legs are naked above the knee: the number of the toes, in one species, is two, and in the remaining species three; and these are placed forwards.

THE BLACK OSTRICH.*

The Ostrich stands so very high as to measure from seven to nine feet from the top of the head to the ground: from the back, however, it is seldom more than three or four feet, the rest of its height being made up by its extremely long neck.

* SYNONYMS.—Struthio Camelus. *Linn.*—Autruche. *Buff.*—Ostrich. *Willughby.*

The head is small, and, as well as the greater part of the neck, is covered only with a few scattered hairs. The feathers of the body are black and loose; those of the wings and tail are of a snowy white, waved and long, having here and there a tip of black. The wings are furnished with spurs. The thighs and flanks are naked; and the feet are strong, and of a grey brown colour.

The sandy and burning desarts of Africa and Asia are the only native residences of the Black Ostriches. Here they are seen in flocks so large as sometimes to have been mistaken for distant cavalry.

There are many circumstances in the economy of this animal which shew it to be very different from the rest of the feathered race. It seems to form one of the links of union in the great chain of nature that connects the winged with the four-footed tribes. Its strong-jointed legs, and, if we may venture so to call them, cloven hoofs, are well adapted both for speed and defence. The wings and all its feathers are insufficient to raise it from the ground; its camel-shaped neck is covered with hair; its voice is a kind of hollow mournful lowing, and it grazes on the plain with the Qua-cha and the Zebra.

The Ostriches frequently do great damage to the farmers in the interior of South Africa, by coming in flocks into their fields, and destroying the ears of wheat so effectually, that in a large tract of land it often happens that nothing but the bare straw is left behind. The body of the Bird is not higher than the corn, and when it devours the ears, it bends

down its long neck, so that at a little distance it cannot be seen: but on the least noise it rears its long head and neck, and generally contrives to escape before the farmer gets within gun-shot of it.

When the Ostrich runs it has a proud and haughty look, and though in great distress, especially if the wind is with it, never appears in great haste. Its wings are frequently of material use in aiding its escape, for when the wind blows in the direction that it is pursuing, it always flaps them. In this case the swiftest horse cannot overtake it: but if the weather is hot, and there is no wind, or if it has by any accident lost a wing, the difficulty of outrunning it is not so great.*

The Ostrich is one of the few polygamous Birds found in a state of nature, one male being generally seen with two or three, and frequently with so many as five females. It has been commonly believed that the female Ostrich, after depositing her eggs in the sand, and covering them up, left them to be hatched by the heat of the climate, and then permitted the young to shift for themselves. Even the author of the book of Job alludes to the Ostrich, "which leaveth her eggs in the earth, and warmeth them in the dust, and forgetteth that the foot may crush them, or that the wild beast may break them. She is hardened against her young ones as though they were not hers: her labour is in vain without fear; because God had deprived her of wisdom, neither hath he imparted to her understanding."†—

* Thunberg, ii. 241. † Job. ch. 39. ver. 14—17.

Late travellers have, however, assured us that no Bird whatever has a stronger affection for her offspring than this, and that none watches her eggs with greater assiduity. It happens, probably, in those hot climates, that there is less necessity for the continual incubation of the female; and she frequently leaves her eggs, which are in no fear of being chilled by the weather: but though she sometimes forsakes them by day, she always carefully broods over them by night; and Kolben, who saw great numbers of these birds at the Cape of Good Hope, affirms that they sit on their eggs like other birds, and that the males and females take this office by turns, as he had frequent opportunities of observing. Nor is it more true what is said of their forsaking the young after they are excluded the shell. On the contrary, these are not able to walk for several days after they are hatched. During this time the old ones are very assiduous in supplying them with grass and water, and very careful to defend them from danger: they will even themselves encounter every danger in their defence. The three or four females united to one male deposit all their eggs in the same place, to the number of ten or twelve each: these they hatch all together, the male taking his turn of sitting on them among the rest. Betwixt sixty and seventy eggs have sometimes been found in one nest. The time of incubation is six weeks. For want of knowing the Ostrich to be polygamous, Linnæus has suffered an error respecting this bird to slip into his Systema Naturæ, where it is asserted that one female sometimes lays near fifty eggs.

M. Le Vaillant informs us, that he started an Ostrich from a nest in Africa, and found in it eleven eggs quite warm, and four others at a little distance from it. Those in the nest had young in them, but his attendants eagerly caught up the exterior ones, assuring him that they were perfectly good to eat. They informed him, that near the nest are always placed a certain number of eggs, which the Birds do not sit upon, and are designed for the first nourishment of the future young. "Experience (says M. Le Vaillant) has convinced me of the truth of this observation, for I never afterwards met with an Ostrich's nest without finding eggs disposed in this manner at a small distance from it."*

Some time after this M. LeVaillant found a female Ostrich on a nest, containing thirty-two eggs, and twelve eggs were arranged at a little distance, each in a cavity formed for it. He remained near the place for a while, and saw three others, besides the former female, come and alternately seat themselves in the nest, each sitting for a quarter of an hour, and then giving place to another, who, while waiting, sat close by the side of her it was to succeed.

That the Ostriches bear great affection to their offspring may be inferred from the assertion of Professor Thunberg, that he once rode past the place where a hen Ostrich was sitting on her nest; the

* The same observation was made by Dr. Shaw, who travelled through Barbary about the beginning of the last century.—*Shaw's Travels, p. 69.*

Bird sprang up and pursued him, evidently with a view to prevent his noticing her eggs or young. Every time he turned his Horse towards her, she retreated ten or twelve paces: but as soon as he rode on again she pursued him, till he had got to some considerable distance from the place from whence she started.*

The nest appears to be merely a hole in the earth, formed by the Birds trampling it for some time with their feet.

If the eggs are touched by any person in the absence of the Birds, they immediately discover it at their return by the smell, and not only desist from laying any more in the same place, but trample all those to pieces with their feet that have been left. The natives of Africa, therefore, are very careful in taking part of the eggs away, not to touch any of them with their hands, but always poke them out of the nest with a long stick.

In the interior of the eggs are frequently discovered a number of small oval-shaped pebbles, about the size of a marrow-fat pea, of a pale yellow colour, and exceedingly hard. Mr. Barrow says, he saw in one egg nine, and in another twelve of them.†

This gentleman, who has favoured the world with an excellent description of the South of Africa,

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* Thunberg, ii. 242.

† Professor Thunberg was informed, that in the eggs a kind of stone was sometimes found, which was set and used for buttons.—*Travels*, i. 178.

says, that the eggs of the Ostrich are there considered as a great delicacy. They are prepared in various ways, but he esteems that adopted by the Hottentots as the best. This is simply to bury them in hot ashes, and through a hole made in the upper end to stir the contents continually round till they acquire the consistence of an omlet: and, prepared in this manner, he says, he often found them an excellent repast in the course of his long journies over the wilds of Africa.* These eggs are easily preserved for a great length of time, even at sea, and without any of that trouble of constantly turning them, which is necessary with Hen's eggs: this is owing entirely to the thickness and strength of their shells. At the Cape of Good Hope they are usually sold for about sixpence sterling each. From their large size, one of them is sufficient to serve two or three persons at a meal.†

Thunberg saw necklaces and ornaments for the waist that the Hottentots had made of the shells of the eggs, by grinding bits of them into the form of small rings.‡

The Ostrich itself is chiefly valuable for its plumage, and the Arabians have reduced the chace of it to a kind of science. They hunt it, we are told, on horseback, and begin their pursuit by a gentle gallop; for should they at the outset use the least rashness, the matchless speed of the game would immediately carry it out of their sight, and in a very short time beyond their reach. But when

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* Barrow, 94. † Thunberg, i. 301. ‡ Thunberg, ii. 176.

they proceed gradually, it makes no particular effort to escape. It does not go in a direct line, but runs first on one side and then on the other, this they take advantage of, and by rushing directly onward save much ground. In a few days, at the furthest, the strength of the animal is exhausted, and it then either turns on the hunters and fights with desperation, or hides its head and tamely receives its fate.

Sometimes the natives conceal themselves in the skin of one of these Birds, and by that means are able to approach near enough to surprize them.

Some persons breed these Birds up in flocks, for they are tamed with very little trouble; and in their domestic state few animals may be rendered more useful. Besides the valuable feathers they cast, the eggs they lay, their skins, which are used by the Arabians as a substitute for leather, and their flesh, which many esteem as excellent food, they are sometimes made to serve the purpose of Horses.

In a tame state it is very pleasant to observe with what dexterity and equipoise they play and frisk about. In the heat of the day, particularly, they will strut along the sunny side of a house with great majesty, perpetually fanning themselves with their expanded wings, and seeming at every turn to admire and be in love with their shadows. During most parts of the day, in hot climates, their wings are in a kind of vibrating or quivering motion, as if they were designed principally to assuage the heat.

They are very tractable and familiar towards persons who are acquainted with them, but often fierce

towards strangers, whom they frequently attempt to push down, by running furiously upon them: and when these happen to be overthrown, they not only peck at them with their bills, but strike at them with their feet, with the utmost violence. The inner claw being exceedingly strong, Dr. Shaw says he once saw an unfortunate person who had his abdomen entirely ripped up by one of these strokes. While thus engaged the Ostriches sometimes make a fierce hissing noise, and have their throats inflated and mouths open. At other times they have a kind of cackling voice, as in some of the poultry. This they use when they have overcome or routed an adversary. During the night they often make a doleful or hideous noise, somewhat resembling the distant roaring of a Lion, or the hoarse tone of a Bear or an Ox, as if they were in great agony.

They will swallow with the utmost voracity rags, leather, wood, iron, or stone, indiscriminately. "I saw one at Oran (says Dr. Shaw) that swallowed without any seeming uneasiness or inconvenience, several leaden bullets, as they were thrown upon the floor, *scorching hot from the mould.*"*

During the time that Mr. Adanson was at Podor, a French factory on the south bank of the river Niger, he says, that two Ostriches, which had been about two years in the factory, afforded him a sight of a very extraordinary nature. These gigantic Birds, though young, were nearly of the full size. "They were (he continues) so tame, that two little

* Shaw's Travels, p. 68, 69.

The Turnstone makes its nest in the sand, and lays three or four olive-coloured eggs spotted with black. At the time of hatching, it has so much courage as to attack both men and dogs, when they approach its nest.

THE PLOVER TRIBE.

These birds are generally found about the mouths of great rivers and in the neighbourhood of torrents. They have a straight, somewhat cylindrical and obtuse bill, seldom longer than the head. The feet are formed for running, with three toes, all placed forwards.

THE DOTTEREL*.

The length of the Dotterel is about ten inches. The bill is not quite an inch long, and black. The forehead is mottled with brown and grey: the top of the head is black; and over each eye is an arched line of white which passes to the hind part of the neck. The cheeks and throat are white; the back

* Synonyms.—Charadrius Morinellus. *Linn.*—Petit Pluvier ou Guignard. *Buff.*—*Bew. Birds*, 334.—*Penn. Brit. Zool. ii. tab.* 73.

subsistence among the smaller Fish, or in the mud; they are a sort of amphibious animals, that occupy the limits between the land and the water, and fill up the gradations in the scale of existence.

Thus the aërial inhabitants consist of three divisions, which have each their separate abode. Some are appointed by nature to reside on the land; others are destined to sail on the water; and to an intermediate tribe the confines of these two elements have been allotted.*

* Buffon.

THE HERON TRIBE.*

THE different species of Heron are very numerous, amounting in the whole to near a hundred. They are found in various parts of the world, but chiefly in the temperate and hot climates. Several of them are migratory. They have long feet and necks, and live almost wholly on Amphibia and Fishes.

The characters of the tribe are, a long, strong, and sharp-pointed bill; linear nostrils, and pointed tongue: toes connected by a membrane as far as the first joint; and the middle claw, in some of the species, pectinated.

THE COMMON CRANE.†

This is a large Bird, measuring upwards of five feet in length. The bill is above four inches long. The plumage is, in general, ash-coloured, but the forehead is black, the sides of the head, behind the

* The Order WADERS commences with this tribe.

† SYNONYMS.—Ardea Grus. *Linn.*— Grue. *Buff.*——*Penn. Brit. Zool.* vol. ii. *App. tab.* 6.

eyes, and the hind part of the neck are white: on the upper part of the neck is a bare ash-coloured space of two inches, and above this the skin is bare and red, with a few scattered hairs. Some parts about the wings are blackish: from the pinion of each wing springs an elegant tuft of loose feathers, curled at the ends, which may be erected at will, but which in a quiescent state hang over and cover the tail. The legs are black.

This species is met with in great flocks in all the northern parts of Europe. We are told that they make their nests in marshes and lay two bluish eggs. They feed on reptiles of all kinds, and on some kinds of vegetables: when the corn is green they are said to make such havock as to ruin the farmers, wherever the flocks alight.

They are migratory, returning northward to breed in the spring, where they generally make choice of the places which they occupied the preceding season, and in the winter inhabiting the warmer regions of Egypt and India.*

The Cranes fly very high, and arrange themselves in the form of a triangle, the better to cleave the air. When the wind freshens, and threatens to break their ranks, they collect their force into a circle; and they adopt the same disposition when the Eagle attacks them. Their migratory voyages are chiefly performed in the night; but their loud screams betray their course. During these noc-

* Latham.

turnal passages the leader frequently calls to rally his forces, and point out the track; and the cry is repeated by the flock, each answering, to give notice that it follows and keeps its rank.

> Part loosely wing the region: part more wise,
> In common, rang'd in figure, wedge their way,
> Intelligent of seasons, and set forth
> Their airy caravan, high over seas
> Flying, and over lands with mutual wing
> Easing their flight. So steers the prudent *Crane*
> Her annual voyage, borne on winds;
> The air floats as they pass, fann'd with unnumber'd plumes.

The flight of the Crane is always supported uniformly, though it is marked by different inflections; and these variations have been observed to indicate the change of weather: a sagacity that may well be allowed to a bird, which, by the vast height to which it soars, is enabled to perceive the distant alterations and motions in the atmosphere. The cries of the Cranes, during the day, forbode rain; and their noisy tumultuous screams announce a storm. If, in a morning or evening, they rise upwards, and fly peacefully in a body, it is a sign of fine weather; but, if they keep low, or alight on the ground, it menaces a tempest.

Like all other large birds, except the rapacious tribe, the Crane has much difficulty in commencing its flight. It runs a few steps, opens its wings, mounts a little way, and then, having a clear space, it displays its vigorous and rapid pinions.

When the Cranes are assembled on the ground, they are said to set guards during the night, and the

circumspection of these birds has been consecrated in the ancient hieroglyphics, as the symbol of vigilance.

According to Kolben, they are often observed in large flocks on the marshes about the Cape of Good Hope. He says, he never saw a flock of them on the ground that had not some placed, apparently, as centinels, to keep a look out, while the others were feeding; and that did not, on the approach of danger, immediately give notice to the rest. These centinels stand on one leg, and, at intervals, stretch out their necks, as if to observe that all are safe. On notice being given of danger, the whole flock are in an instant on the wing. Kolben goes further; he tells us that in the night each of the watching Cranes, which rest on their left legs, "hold up in the right claw a stone of considerable weight, in order that, if overcome by sleep, the falling of the stone may awake them!"*

Cranes are seen in France in the spring and autumn, but are, for the most part, mere passengers. We are told that they formerly visited the marshes of Lincolnshire and Cambridgeshire in vast flocks; but the case is altered; as of late none have been met with.—The flesh is black, tough, and bad.

THE WHITE STORK.†

The length of the White Stork is about three feet. The bill is near eight inches long, and of a

* Kolben, ii. 141.

† SYNONYMS.—Ardea Ciconia. *Linn.*—Cigogne Blanche. *Buff.*

fine red colour. The plumage is wholly white, except the orbits of the eyes, which are bare and blackish: some of the feathers on the side of the back and on the wings are black. The skin, the legs, and the bare part of the thighs are red.

This species is semi-domestic, haunting towns and cities, and in many places stalking unconcerned about the streets, in search of offals and other food. They remove the noxious filth, and clear the fields of Serpents and Reptiles. On that account they are protected in Holland; and held in high veneration by the Mahomedans; and so greatly respected were they in times of old, by the Thessalians, that to kill one of these birds was a crime expiable only by death.

Bellonius tells us that "the Storks visit Egypt in such abundance, that the fields and meadows are white with them. Yet the Egyptians are not displeased with this sight; as Frogs are generated in such numbers there, that, did not the Storks devour them, they would over-run every thing. Besides they also catch and eat Serpents. Between Belba and Gaza the fields of Palestine are often desert on account of the abundance of Mice and Rats; and, were they not destroyed, the inhabitants could have no harvest."

The disposition of the Stork is mild, neither shy nor savage: it is an animal easily tamed; and may be trained to reside in gardens, which it will clear of Insects and Reptiles. It has a grave air, and a mournful visage; yet, when roused by example, it shews a certain degree of gaiety, for it joins the frolics of

children, hopping and playing with them: "I saw in a garden (says Dr. Hermann) where the children were playing at hide and seek, a tame Stork join the party, run its turn when touched, and distinguish the child whose turn it was to pursue the rest, so well, as, along with the others, to be on its guard."

To this Bird the ancients ascribed many of the moral virtues; as, temperance, conjugal fidelity, and filial and paternal piety. The manners of the Stork are such as were likely to attract peculiar attention from them. It bestows much time and care on the education of its young, and does not leave them till they have strength sufficient for their defence and support. When they begin to flutter out of the nest the mother bears them on her wings; she protects them from danger, and will sometimes perish with them rather than forsake them. A celebrated story is extant in Holland, that when the city of Delft was on fire, a female Stork in vain attempted several times to carry off her young ones, and finding that she was unable to effect their escape, suffered herself to be burned with them.

The following anecdote affords a singular instance of sagacity in this Bird:—A wild Stork was brought by a farmer, in the neighbourhood of Hamburg, into his poultry-yard, to be the companion of a tame one he had long kept there; but the tame Stork disliking the idea of a rival, fell upon the poor stranger, and beat him so unmercifully, that he was compelled to take wing, and with some difficulty got away. About four months afterwards,

however, he returned to the poultry-yard, recovered of his wounds, and attended by three other Storks, who no sooner alighted than they all together fell upon the tame Stork and killed him.*

Storks are Birds of passage, and observe great exactness in the time of their autumnal departure from Europe to more favourite climates. They pass a second summer in Egypt and the marshes of Barbary; in the former country they pair, and lay again, and educate a second brood. Before each of their migrations they rendezvous in amazing numbers. They are for a while much in motion among themselves; and after making several short flights, as if to try their wings, all of a sudden take flight with great silence, and with such speed, as in a moment to attain so great a height that they are instantly out of sight.

> Where the Rhine loses its majestic force
> In Belgian plains, won from the raging deep
> By diligence amazing, and the strong
> Unconquerable hand of Liberty,
> The Stork-assembly meets; for many a day
> Consulting deep and various, ere they take
> Their arduous voyage thro' the liquid sky.
> And now, their route design'd, their leaders chose,
> Their tribes adjusted, clean'd their vigorous wings;
> And many a circle, many a short essay,
> Wheel'd round and round, in congregation full
> The figured flight ascends, and riding high
> Th' aërial billows, mixes with the clouds.

These Birds are seldom seen farther north than Sweden, and though they have scarcely ever been

* Letters on Italy by Mariana Starke, ii. 253.

met with in England, are so common in Holland as to build every where on the tops of the houses, where the good-natured inhabitants provide boxes for them to make their nests in: they are also careful that the Birds suffer no injury, always resenting this as an offence committed against themselves. Storks are also common at Aleppo, and in plenty at Seville, in Spain. At Bagdad hundreds of their nests are said to be seen about the houses, walls, and trees; and at Persepolis, or Chilmanar, in Persia, the remains of the pillars serve them to build on, "every pillar having a nest on it."*

During their migrations they are seen in vast flocks. Shaw saw three flights of them leaving Egypt, and passing over Mount Carmel, each half a mile in breadth; and he says they were three hours in passing over.

THE COMMON HERON.†

This species, which is very common in these kingdoms, is about three feet three inches in length. The bill is six inches long, and of a dusky colour. The feathers of the head are long, and form an elegant crest. The neck is white; the fore part marked with a double row of black spots. The general colour of the plumage is a dusky white; with the bastard wing, and greater quills, black. The middle of the

* Fryer's Travels.

† Synonyms.—Ardea Cinerea. *Linn.*—Heron. *Buff.*—Heron-shaw. *Montagu.*——*Penn. Brit. Zool. vol. ii. tab.* 61.

back is almost bare, and covered by the loose feathers of the scapulars; the feathers of the neck also hang loose over the breast. On each side under the wing they are black. The legs are of a dirty green, and the inner edge of the middle claw is serrated.

The female has no crest, and the feathers on the breast are short.

Of all the Birds that are known, this is one of the most formidable enemies to the scaly tribe. There is, in fresh waters, scarcely a Fish, however large, that the Heron will not strike at and wound, though unable to carry it off: but the smaller fry are his chief subsistence; these, pursued by their larger fellows of the deep, are obliged to take refuge in shallow waters, where they find the Heron a still more formidable enemy. His method is to wade as far as he can go into the water, and there patiently wait the approach of his prey, into which, when it comes within his sight, he darts his bill with inevitable aim. In this manner he is found to destroy more in a week than an Otter will in three months. Willughby says he has seen an Heron that had no fewer than seventeen Carp in his belly at once; these he would digest in six or seven hours, and then go to fishing again. "I have seen a Carp (he continues) taken out of a Heron's belly nine inches and a half long. Some gentlemen who kept tame Herons, to try what quantity one of them would eat in a day, have put several smaller Roach and Dace in a tub; and they have found him eat fifty in a day, one day with another. In this manner a single Heron

will destroy fifteen hundred Store Carp in a single half year."*

The Heron, though he usually takes his prey by wading into the water, frequently also takes it while on the wing, but this always in shallow waters, where he is able to dart with more certainty than in the deeps; for in this case, though the Fish does, at the first sight of its enemy, descend, yet the Heron, with his long bill and legs, instantly pins it to the bottom, and thus seizes it securely. In this manner, after having been seen with its long neck for above a minute under water, he will rise upon the wing with a Trout or an Eel struggling in his bill. The greedy Bird, however, flies to the shore, scarcely gives it time to expire, but swallows it whole, and then returns again to its fishing.

Heron-hawking was formerly a favourite diversion in this kingdom, and a penalty of twenty shillings incurred on any person's taking the eggs of this Bird. Its flesh was also in former times much esteemed, being valued at an equal rate with that of the Peacock.

In breeding-time the Herons unite together in large societies, and build in the highest trees. Sometimes so many as eighty have been seen in one tree. The nest is made of sticks, and lined with a few rushes and wool, or feathers. The eggs are four or five in number, and of a pale green colour.

If taken young these Birds may be tamed, but when the old Birds are captured, they soon pine away, refusing every kind of nourishment.

* Willughby, p. 23.

The different parts in the structure of the Heron are admirably adapted to its mode of life. It has long legs for the purpose of wading; a long neck, answerable to these, to reach its prey in the water; and a wide throat to swallow it. Its toes are long, and armed with strong hooked talons, one of which is serrated on the edge, the better to retain the fish it has struck. The bill is long and sharp, having serratures towards the point, which stand backwards; these, after the prey is struck, act like the barbs of a fish-hook, in detaining it till the Bird has time to seize it with the claws. Its broad, large, concave, and apparently heavy, wings, for so small a body, are of great use in enabling it to carry its load to the nest, which is sometimes at a great distance. Dr. Derham tell us, that he has seen lying scattered under the trees of a large heronry, Fishes several inches in length, which must have been conveyed by the Birds from the distance of several miles: and D'Acre Barret, Esq. the owner of this heronry, saw a large Eel that had been conveyed there by one of them, notwithstanding the inconvenience that it must have caused to it by its writhing and twisting about.

The body of the Heron is very small, and always lean; and the skin is said to be scarcely thicker than what is called gold-beater's skin. It is very probable that this Bird is capable of long abstinence, as its usual food, which is Fish and Reptiles, cannot be had at all times.*

* Penn. Brit. Zool. ii. 422.

THE GIGANTIC CRANE.*

This is a large species, measuring, from tip to tip of the wings, near fifteen feet. The bill is of a vast size, nearly triangular, and sixteen inches round at the base. The head and neck are naked, except a few straggling curled hairs. The feathers of the back and wings are of a blueish ash-colour, and very stout: those of the breast are long. The craw hangs down the fore-part of the neck like a pouch. The belly is covered with a dirty white down; and the upper part of the back and shoulders are surrounded with the same. The legs and half the thighs are naked; and the naked parts are full three feet in length.

The Gigantic Crane is an inhabitant of Bengal and Calcutta, and is sometimes found on the coast of Guinea. It arrives in the internal parts of Bengal before the rainy season, and retires as soon as the dry season commences. Its aspect is filthy and disgusting to a degree; yet it is one of the most useful birds these countries produce, in clearing them of Snakes and noxious reptiles and insects. It seems to finish the work begun by the Jackal and Vulture: they clear away the flesh of animals, and these Birds remove the bones, by swallowing them entire.—They sometimes feed on fish, and one of them will generally devour as much as would serve four men.

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* SYNONYMS.—Ardea Dubia. *Linn.*—Argil, or Hargal. *Ives.*—Boorong, Cambing, Booring-volar. *Marsden.*—Argali, Pokkoe. *Bosman.*—Gigantic Crane. *Latham.*——*Latham's Synopsis, vol.* iii. *tab.*

without that steady prop to support its steps, it must be liable, in speculation, to perpetual vacillations, and seldom able to preserve the true centre of gravity.

"These long-legged Plovers are birds of South Europe, and rarely visit our island: and when they do, are wanderers and stragglers, and impelled to make so distant and northern an excursion from motives or accidents for which we are not able to account."

This bird is common in Egypt and the warmer parts of America, where it feeds on flies and other insects.

THE FLAMINGO TRIBE.

The Flamingos combine the characters of the two Linnean orders the Waders and Swimmers*. They have a long neck and legs. Their bill is thick, large, and bending in the middle. The higher part of the upper mandible is carinated; the lower compressed. The edges of the upper mandible are sharply indented, those of the lower transversely furrowed. The nostrils are covered above with a thin plate, and are pervious. The tongue is cartilaginous, and pointed at the end; the middle part is muscular; and the upper part aculeated. The

* Grallæ and Anseres.

mistaken for *canoes* on the surface of a smooth sea; and when on the sand-banks for *men* and *women* picking up shell-fish on the beach.

A young bird of this kind, about five feet in height, was brought up tame, and presented to the Chief of the Bananas, where Mr. Smeathman lived, and soon became perfectly familiar. It regularly attended the hall at dinner-time, placing itself behind its master's chair, frequently before any of the guests entered. The servants were obliged to watch it carefully, and to defend the provisions, by beating it off with sticks; and, notwithstanding every precaution, it would frequently snatch off something from the table. It one day purloined a whole boiled fowl, which it swallowed in an inſtant.

It used to fly about the island, and roost very high among the silk-cotton trees, from whence, at the distance of two or three miles, it could see when the dinner was carried across the court; when, darting from its station, it would be in time enough to enter with some of those who carried in the dishes.

When sitting, it was observed always to rest itself on the whole length of the hind-part of the leg. It sometimes stood in the room for half an hour after dinner, with the head turning alternately, as if listening to the conversation.

Its courage was not equal to its voracity, for a child of eight or ten years old was able to put it to flight, though it would seem at first to stand on its defence, by threatening with its enormous bill widely extended, and crying out with a loud hoarse voice.

It preyed on small quadrupeds, birds, and rep-

the least danger, he gives a loud scream, in sound not much unlike a trumpet, and instantly the whole flock is on wing. They feed in silence; but when thus roused, they all join in the noise, and fill the air with their screams.

Their nest is of a singular construction: it is formed of mud in the shape of a hillock with a cavity at the top: in this the female generally lays two white eggs, of the size of those of a goose, but longer. The hillock is of such an height as to admit of the bird's sitting on it, or rather standing, as her legs are placed one on each side at full length. Linnæus tells us that she will sometimes lay her eggs on a projecting part of a low rock, if it happen to be sufficiently convenient to admit of the legs being placed on each side.

It is not till a long time after they are hatched that the young are able to fly, but they run with amazing swiftness. They are sometimes caught, and, very different from the old ones, suffer themselves to be carried home, and are tamed very easily. In five or six days they become familiar, eat out of the hand, and drink a surprising quantity of sea-water. But though easily rendered domestic, it is difficult to rear them, as they are apt to decline, from the want of their natural supplies.

Flamingos are often met with in the warmer parts of the old continent, and, except in the breeding time, are generally found in great flocks. When seen at a distance they appear like a regiment of soldiers, being often ranged alongside of one another on the borders of rivers searching for food, which consists

commences its journey or change of place at sunset. Its precautions for concealment and security seem indeed altogether directed by care and circumspection. It usually sits in the reeds with its head erect, by which means, from the great length of the neck, it sees over their tops, without being itself perceived by the sportsman.

Its principal food during summer consists of Fish and Frogs, but in the autumn it goes to the woods in pursuit of Mice, which it seizes with great dexterity, and always swallows whole. About this season it generally becomes very fat.

In its general disposition it is not so stupid, but is much more ferocious than the Heron. When caught, it exhibits much rancour, and strikes chiefly at the eyes of its antagonist. Few birds make so cool a defence: it is never itself the aggressor, but, if once attacked, it fights with the greatest intrepidity. If darted on by a bird of prey, it does not attempt to escape, but with its sharp beak erected, receives the shock on the point, and thus compels its enemy to retreat, sometimes with a fatal wound. Old Buzzards never attempt to attack the Bittern, and the common Falcons always endeavour to rush upon it behind, while it is on the wing.

When wounded by the sportsman it often makes a severe resistance. It does not retire, but waits his onset, and gives such vigorous pushes with his bill, as to wound the leg even through the boot. Sometimes it turns on its back, like the rapacious birds, and fights both with its bill and claws. When surprised by a Dog, it is said always to throw itself into

to every species of the feathered tribe. Two of these birds were given to a clergyman, who put them into his garden; one soon died, but the other continued to pick up such food as the place afforded till winter deprived it of its usual supply. Necessity soon compelled it to draw nearer the house, by which it gradually became familiarized to occasional interruptions from the family. At length one of the servants, when she had occasion to go into the back-kitchen with a light, observed that the Lapwing always uttered his cry of "*Pee-wit*" to obtain admittance. He soon grew more familiar: as the winter advanced, he approached as far as the kitchen, but with much caution, as that part of the house was generally occupied by a dog and a cat, whose friendship the Lapwing at length conciliated so entirely, that it was his regular custom to resort to the fireside as soon as it grew dark, and spend the evening and night with his two associates, sitting close by them, and partaking of the comforts of a warm fireside. As soon as spring appeared, he left off coming to the house and betook himself to the garden; but on the approach of winter he had recourse to his old shelter and friends, who received him very cordially. Security was productive of insolence; what was at first obtained with caution, was afterwards taken without reserve: he frequently amused himself with washing in the bowl which was set for the dog to drink out of; and while he was thus employed, he shewed marks of the greatest indignation if either of his companions presumed

seldom dare to attack those of the Bittern, on account of the old ones being always on guard to defend their offspring.

A female Bittern, that was killed during the frost in winter, was found to have in her stomach several Warty Lizards quite perfect, and the remains of some Toads and Frogs. These were supposed to have been taken out of the mud, under shallow water, in the swamp where the bird was shot.*

In the reign of Henry VIII. the Bittern was held in much esteem at the tables of the great. Its flesh has much the flavour of Hare, and is far from being unpleasant: the poulterers even now value this bird at about half-a-guinea. The hind-claw, which is remarkably long, was once supposed a grand preservative for the teeth, and was often set in silver, and used as a tooth-pick.†

THE SNIPE TRIBE.

IN this tribe the bill is long, slender, weak, and straight. The nostrils are linear, and lodged in a furrow. The head is entirely covered with feathers. The feet have four toes, the hind one of which is very short, and consists of several joints.

* Latham's Second Supplement, p. 300.

† Penn. Brit. Zool. ii. 426, 427.

The Turnstone makes its nest in the sand, and lays three or four olive-coloured eggs spotted with black. At the time of hatching, it has so much courage as to attack both men and dogs, when they approach its nest.

THE PLOVER TRIBE.

These birds are generally found about the mouths of great rivers and in the neighbourhood of torrents. They have a straight, somewhat cylindrical and obtuse bill, seldom longer than the head. The feet are formed for running, with three toes, all placed forwards.

THE DOTTEREL*.

The length of the Dotterel is about ten inches. The bill is not quite an inch long, and black. The forehead is mottled with brown and grey: the top of the head is black; and over each eye is an arched line of white which passes to the hind part of the neck. The cheeks and throat are white; the back

* Synonyms.—Charadrius Morinellus. *Linn.*—Petit Pluvier ou Guignard. *Buff.*—*Bew. Birds*, 334.—*Penn. Brit. Zool. ii. tab.* 73.

the neighbouring woods and thickets for some time. In this crisis the sportsmen are all out, and the whole surrounding country echoes the discharge of their guns: seventeen brace have been killed by one person in a day. But if they are detained long on the dry heaths, they become so lean as to be scarcely eatable. The instant a fair wind springs up they seize the opportunity, and where the sportsman has seen hundreds one day, he will often not find a single bird the next.*

Very few of them breed in England, and perhaps when they do, it may be owing to the old birds having been so wounded by the sportsmen in the winter, as to be disabled from taking their long journey in spring. They build their nests on the ground, generally at the root of some tree, and lay four or five eggs, about the size of those of a Pigeon, of a rusty colour, and marked with brown spots. They are remarkably tame during incubation: a person who discovered a Woodcock on its nest, often stood over, and even stroked it; notwithstanding which it hatched the young, and in due time disappeared with them.

A single bird was observed to remain in a coppice belonging to a gentleman in Dorsetshire through the summer. The place, from its shady and moist situation, was well calculated to maintain it; yet by degrees it lost almost all its feathers, so that for some time it was not able to fly, and was often caught;

* Penn. Brit. Zool. ii. 433.

but in the autumn it recovered its feathers and strength, and flew away.*

It has been remarked in England, that for several years past Woodcocks have become very scarce; this seems easily accounted for. Sweden, like other countries, is making a gradual progress in the arts of luxury, among which the indulgence of the palate fills no undistinguished place. The eggs of Wild-fowl have of late become a great delicacy among the inhabitants of that country, who encourage the boors to find out their nests. The eggs of the Woodcock they are particularly fond of, and the boors offer them in large quantities for sale, in the market at Stockholm. From this practice it is not improbable that the breed, not only of this bird, but of several of the species of Grous, will be greatly diminished, if not at last totally extirpated.

The inhabitants of the North of Europe, to whose woods the Woodcocks retire in the summer, never eat the birds, esteeming their flesh unwholesome, from the circumstance of their having no crops.†

In Lancashire great numbers of Woodcocks are taken in traps in moonlight nights. Long parallel rows of stones or sticks, about four or five inches high, are made on the commons where they frequent. In these rows several intervals or gateways are left, in which the traps are placed. When the bird, running about in search of food,

* Linn. Tran. iii. 13. † Consett, 73.

comes to one of these rows, he will not cross it, but runs along the side till he comes to a gateway, which he enters, and where he is taken.*

THE SANDPIPER TRIBE.

THE Sandpipers have a straight and slender bill, about an inch and a half long; small nostrils, and a slender tongue. The toes are divided, or are very slightly connected, at the base, by a membrane: the hinder toe is short and weak.

THE RUFF AND REEVE.†

The Ruff is about a foot in length, with a bill about an inch long. The face is covered with yellow pimples, and the back part of the head and neck are furnished with long feathers, standing out somewhat like the ruff worn by our ancestors: a few of these feathers stand up over each eye, and appear not unlike ears. The colours of the Ruff are in no two birds alike; in general they are brownish, and barred with black, though some have been seen that were altogether white. The lower parts of the belly and the tail coverts are white. The tail is

* Heysham, in Hutchinson's Cumberland, i. 18.

† Synonyms.—Tringa Pugnax. *Linn.*—Combatant, ou Paon de Mer. *Buff.*——*Penn. Brit. Zool. vol. ii. tab.* 69.

without that steady prop to support its steps, it must be liable, in speculation, to perpetual vacillations, and seldom able to preserve the true centre of gravity.

"These long-legged Plovers are birds of South Europe, and rarely visit our island: and when they do, are wanderers and stragglers, and impelled to make so distant and northern an excursion from motives or accidents for which we are not able to account."

This bird is common in Egypt and the warmer parts of America, where it feeds on flies and other insects.

THE FLAMINGO TRIBE.

The Flamingos combine the characters of the two Linnean orders the Waders and Swimmers*. They have a long neck and legs. Their bill is thick, large, and bending in the middle. The higher part of the upper mandible is carinated; the lower compressed. The edges of the upper mandible are sharply indented, those of the lower transversely furrowed. The nostrils are covered above with a thin plate, and are pervious. The tongue is cartilaginous, and pointed at the end; the middle part is muscular; and the upper part aculeated. The

* Grallæ and Anseres.

fusion, catch them, by means of nets, in great numbers.

The Reeves lay four eggs, in a tuft of grass, about the beginning of May, and the young are hatched in about a month.

It is not known with certainty in what countries these birds pass the winter.*

THE LAPWING.†

This bird is too well known to need any description here. It is found in most parts of Europe, as far north as Iceland. In the winter it is met with in Persia and Egypt.

The chief food of the Lapwings is Worms, and at some times they may be seen in flocks nearly covering the low marshy grounds in search of these, which they draw with great dexterity from their holes. When the bird meets with one of those little clusters of pellets, or rolls of earth, that are thrown out by the Worm's perforations, it first gently removes the mould from the mouth of the hole, then strikes the ground at the side with its foot, and steadily and attentively waits the issue; the reptile, alarmed by the shock, emerges from its retreat, and is instantly seized.‡ In the evening

* Penn. Brit. Zool. ii. 457.

† SYNONYMS.—Tringa Vanellus. *Linn.*—Vanneau. *Buff.*—Lapwing, or Bastard Plover. *Willughby.—Bew. Birds, p.* 324.

‡ "To ascertain this circumstance (says M. Baillon) I employed the same stratagem: in a field of green corn, and in the garden, I beat the earth for a short time, and I saw the Worms coming out; I pressed

the Lapwings pursue a different plan; they run along the grass, and feel under their feet the Worms, which now come forth, invited by the coolness of the air. Thus they obtain a plentiful meal, and afterwards they wash their bill and feet in the small pools or rivulets.

"I have seen this bird (says Mr. Latham) approach a Worm-cast, turn it aside, and, after making two or three turns about, by way of giving motion to the ground, the Worm came out, and the watchful bird, seizing hold of it, drew it forth."*

They remain in England the whole year. The female lays two eggs on the dry ground, near some marsh, upon a little bed, which she prepares of dry grass. These are olive-coloured, and spotted with black. She sits about three weeks; and the young are able to run within two or three days after they are hatched.

The parent exhibits the utmost attachment to them, and the arts used by this bird to allure Boys and Dogs from the place where they are running are extremely amusing. She does not wait their arrival at the nest, but boldly pushes out to meet them. When as near as she dare venture, she rises from the ground with a loud screaming voice, as if just flushed from hatching, though probably at the same time not within a

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down a stake, which I then turned in all directions to shake the soil: this method succeeds still quicker; the Worms crawled out in crowds even at the distance of a fathom from the stake."

* Synopsis.

hundred yards of her nest. She now flies with great clamour and apparent anxiety, whining and screaming round the invaders, striking at them with her wings, and sometimes fluttering as if she was wounded. To complete the deception, she becomes still more clamorous as she retires from the nest. If very near, she appears altogether unconcerned, and her cries cease in proportion as her fears are augmented. When approached by Dogs she flies heavily, at a little distance before them, as if maimed, still vociferous, and still bold, but never offering to move towards the quarter where her young are stationed. The Dogs pursue in expectation every moment of seizing the parent, and by this means actually lose the young; for the cunning bird, having thus drawn them off to a proper distance, exerts her powers, and leaves her astonished pursuers to gaze at the rapidity of her flight.

There are few readers at all acquainted with the country who will not recollect how justly the following lines describe the manners of this bird:

> —— Hence around the head
> Of wandering swains, the white-wing'd plover wheels
> Her sounding flight, and then directly on
> In long excursion skims the level lawn,
> To tempt him from her nest.

The following anecdote exhibits the domestic nature of the Lapwing, as well as the art with which it conciliates the regard of animals differing from itself in nature, and generally considered as hostile

to every species of the feathered tribe. Two of these birds were given to a clergyman, who put them into his garden; one soon died, but the other continued to pick up such food as the place afforded till winter deprived it of its usual supply. Necessity soon compelled it to draw nearer the house, by which it gradually became familiarized to occasional interruptions from the family. At length one of the servants, when she had occasion to go into the back-kitchen with a light, observed that the Lapwing always uttered his cry of "*Pee-wit*" to obtain admittance. He soon grew more familiar: as the winter advanced, he approached as far as the kitchen, but with much caution, as that part of the house was generally occupied by a dog and a cat, whose friendship the Lapwing at length conciliated so entirely, that it was his regular custom to resort to the fireside as soon as it grew dark, and spend the evening and night with his two associates, sitting close by them, and partaking of the comforts of a warm fireside. As soon as spring appeared, he left off coming to the house and betook himself to the garden; but on the approach of winter he had recourse to his old shelter and friends, who received him very cordially. Security was productive of insolence; what was at first obtained with caution, was afterwards taken without reserve: he frequently amused himself with washing in the bowl which was set for the dog to drink out of; and while he was thus employed, he shewed marks of the greatest indignation if either of his companions presumed

to interrupt him. He died in the asylum he had chosen, being choaked with something that he picked up from the floor*.

THE TURNSTONE†.

The Turnstone is about the size of a thrush; its bill is black, about an inch in length, and a little turned up at the end. The body is black on the upper parts, variously marked with white and rust colour: the breast and belly are white. The legs are short and orange-coloured.

This bird is found on various parts of the English and Scots coasts, and in North America. It has its English name from its custom of turning over stones to prey upon Insects and Worms concealed beneath them.

When Mr. Catesby was on his voyage to North America, one of these birds, about forty leagues from the coast of Florida, flew on board the vessel. It was put into a cage, and shewed much activity in turning up stones that were put to it: but not finding under them its proper food, it soon died. In this action it was observed to move only the upper mandible of its bill, yet it was able, with great dexterity and quickness, to turn over stones of three pounds weight‡.

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* Bewick's Birds, p. 326.

† Synonyms.—Tringa Interpres. *Linn.* —Tourne-pierre. *Buff.* ——Turnstone or Sea Dottrel. *Willughby.*

‡ Catesby, i. 72.

The Turnstone makes its nest in the sand, and lays three or four olive-coloured eggs spotted with black. At the time of hatching, it has so much courage as to attack both men and dogs, when they approach its nest.

THE PLOVER TRIBE.

These birds are generally found about the mouths of great rivers and in the neighbourhood of torrents. They have a straight, somewhat cylindrical and obtuse bill, seldom longer than the head. The feet are formed for running, with three toes, all placed forwards.

THE DOTTEREL*.

The length of the Dotterel is about ten inches. The bill is not quite an inch long, and black. The forehead is mottled with brown and grey: the top of the head is black; and over each eye is an arched line of white which passes to the hind part of the neck. The cheeks and throat are white; the back

* Synonyms.—Charadrius Morinellus. *Linn.*—Petit Pluvier ou Guignard. *Buff.*—*Bew. Birds*, 334.—*Penn. Brit. Zool. ii. tab.* 73.

and wings are of a light brown inclining to olive, each feather margined with pale rust colour. The fore part of the neck is surrounded by a broad band of a light olive colour, bordered below with white. The breast is of a pale dull orange; the middle of the belly black; and the rest of the belly and the thighs are of a reddish white. The tail is olive brown, black near the end, and tipped with white; and the outer feathers are margined with white. The legs are of a dark olive.

These birds are migratory, appearing in flocks of eight or ten, about the latter end of April, and staying all May and June, when they become very fat, and are much esteemed for the table. They are found in tolerable plenty in Cambridgeshire, Lincolnshire and Derbyshire, but in other parts of the kingdom they are scarcely known. They are supposed to breed among the mountains of Westmoreland and Cumberland.

The Dotterel is in its manners a very singular bird, and may be taken by the most simple artifice. The country people are said sometimes to go out after it in the night with a lighted torch or candle: and the bird on these occasions will mimic the actions of the fowler with great archness. When he stretches out an arm, it stretches out its wing; if he moves a foot, it moves one also: and every other motion it endeavours to imitate. This is the opportunity that he takes of entangling it in his net. The more certain method of the gun has of late, however, almost superseded this artifice. To the former mode it is that Drayton alludes in his panegyrical verses on Coryate's Crudities:

Most worthy man: with thee it is even thus,
As men take Dottrels, so hast thou ta'en us;
Which as a man his arm or leg doth set,
So this fond bird will likewise counterfeit.

THE LONG-LEGGED OR STILT PLOVER*.

Of this uncommon bird Mr. White has given us a very pleasing description: "In the last week of last month (April 1779) five of these most rare birds, too uncommon to have obtained an English name, but known to naturalists by the terms *himantopus*, or *loripes*, or *Charadrius himantopus*, were shot upon the verge of Frensham-pond, a large lake belonging to the bishop of Winchester, and lying between Woolmer-forest and the town of Farnham in the county of Surrey. The pond-keeper says there were three brace in the flock; but that after he had satisfied his curiosity he suffered the sixth to remain unmolested.

"One of these specimens I procured, and found the length of the legs to be so extraordinary, that at first sight one might have supposed the shanks had been fastened on to impose on the credulity of the beholder: they were legs in *caricatura*; and had we seen such proportions on a Chinese or Japan screen we should have made large allowance for the fancy of the draughtsman.

"These birds are of the Plover family, and might

* Synonyms.—Charadrius himantopus. *Linn.*—Echasse. *Buff.*—Long-legs. *Ray.*—Long-legged Plover. *Penn.*—Stilt Plover. *White.*

with propriety be called the *Stilt Plovers*. My specimen when drawn and stuffed with pepper weighed only four ounces and a quarter, though the *naked* part of the thigh measured three inches and a half. Hence we may safely assert that these birds exhibit weight for inches, and have incomparably the greatest length of legs of any known bird. The *flamingo*, for instance, is one of the most long-legged birds, and yet it bears no manner of proportion to the *himantopus*; for a cock flamingo weighs, at an average, about four pounds avoirdupois; and his legs and thighs measure usually about twenty inches. But four pounds are fifteen times and a fraction more than four ounces and a quarter; and if four ounces and a quarter have eight inches of legs, four pounds must have one hundred and twenty inches and a fraction of legs, namely somewhat more than ten feet; such a monstrous proportion as the world never saw*! If we try the experiment in still larger birds, the disparity would still increase. It must be matter of great curiosity to see the Stilt Plover move; to observe how it can wield such a length of lever with such feeble muscles as the thighs seem to be furnished with. At best one should expect it to be but a bad walker: but what adds to the wonder is that it has no back toe. Now,

* It ought here to be remarked, that Mr. White appears to have calculated the weights of these birds unfairly, the Plover after it was stuffed, and the Flamingo from a perfect bird; which, in comparing one with the other, will make a difference extremely material.

without that steady prop to support its steps, it must be liable, in speculation, to perpetual vacillations, and seldom able to preserve the true centre of gravity.

"These long-legged Plovers are birds of South Europe, and rarely visit our island: and when they do, are wanderers and stragglers, and impelled to make so distant and northern an excursion from motives or accidents for which we are not able to account."

This bird is common in Egypt and the warmer parts of America, where it feeds on flies and other insects.

THE FLAMINGO TRIBE.

The Flamingos combine the characters of the two Linnean orders the Waders and Swimmers*. They have a long neck and legs. Their bill is thick, large, and bending in the middle. The higher part of the upper mandible is carinated; the lower compressed. The edges of the upper mandible are sharply indented, those of the lower transversely furrowed. The nostrils are covered above with a thin plate, and are pervious. The tongue is cartilaginous, and pointed at the end; the middle part is muscular; and the upper part aculeated. The

* Grallæ and Anseres.

neck is long. The legs and thighs are of great length: the feet are webbed; and the back toes very small.

THE RED FLAMINGO*.

The body of the Flamingo is about the size of that of a goose; but its legs and neck are of such an extraordinary length, that when it stands erect it is upwards of six feet in height. The body is of a beautiful scarlet. It is an inhabitant of those parts of America that are as yet but thinly peopled. Here it is said to live in a state of society, and under better polity than most others of the feathered creation.

When the Europeans first went to America, they found the Flamingos on the shores tame and gentle, and no way distrustful of mankind. Little did they suspect what passions lurked under an aspect so comely. When the fowler had killed one, the rest of the flock, so far from attempting to fly, only regarded the fall of their companion in a kind of fixed astonishment: another and another shot was discharged, and thus the fowler often levelled the whole flock, before one of them attempted to escape †. Now, however, they regard us with aversion: wherever they haunt, one of the number, it is said, is always appointed to watch while the rest are employed in feeding. And the moment he perceives

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* Synonyms.—Phœnicopterus ruber. *Linn.*—Flamant. *Buff.*—*Latham's Synopsis, iii. tab.* 93.

† Catesby, i. 73.

the least danger, he gives a loud scream, in sound not much unlike a trumpet, and instantly the whole flock is on wing. They feed in silence; but when thus roused, they all join in the noise, and fill the air with their screams.

Their nest is of a singular construction: it is formed of mud in the shape of a hillock with a cavity at the top: in this the female generally lays two white eggs, of the size of those of a goose, but longer. The hillock is of such an height as to admit of the bird's sitting on it, or rather standing, as her legs are placed one on each side at full length. Linnæus tells us that she will sometimes lay her eggs on a projecting part of a low rock, if it happen to be sufficiently convenient to admit of the legs being placed on each side.

It is not till a long time after they are hatched that the young are able to fly, but they run with amazing swiftness. They are sometimes caught, and, very different from the old ones, suffer themselves to be carried home, and are tamed very easily. In five or six days they become familiar, eat out of the hand, and drink a surprising quantity of sea-water. But though easily rendered domestic, it is difficult to rear them, as they are apt to decline, from the want of their natural supplies.

Flamingos are often met with in the warmer parts of the old continent, and, except in the breeding time, are generally found in great flocks. When seen at a distance they appear like a regiment of soldiers, being often ranged alongside of one another on the borders of rivers searching for food, which consists

principally of small fish and water insects: these they take by plunging the bill and part of the head into the water, and from time to time trampling the bottom with their feet, to disturb the mud in order to raise up their prey. In feeding they are said to twist their neck in such a manner that the upper part of their bill is applied to the ground.

These beautiful birds were much esteemed by the Romans, who often used them in their costly sacrifices and sumptuous entertainments. Their flesh is thought pretty good food: but the tongue was looked upon by the ancients as among the most delicate of all eatables: Pliny, Martial, and many others of their writers, speak of it in the highest terms of praise.

THE DUCK TRIBE*.

THE bill in this tribe, which comprehends what are generally denominated Swans, Geese, and Ducks, is strong, broad, flat, and generally furnished at the end with a kind of nail: the edges of the mandibles are marked with sharp serratures. The nostrils are small and oval. The tongue is broad, having the edges near the base fringed. The toes are four, three before and one behind; the middle one the longest.

THE WHISTLING SWAN†.

The Whistling or Wild Swan is somewhat less than the tame species. The bill is three inches long, yellowish white to the middle, but black at the end. The whole plumage is white; and the legs are black.

This species is an inhabitant of the northern regions; never appearing in England except in hard

* The order of SWIMMERS commences here.

† SYNONYMS.—Anas cygnus. *Linn.*—Cygne sauvage. *Buff.*—Wild Swan, Elk, Hooper. *Willughby.*—Whistling Swan. *Latham.*

winters, when flocks of five or six are now and then seen. Martin says, that in the month of October Swans come in great numbers to Lingey, one of the Western Isles, and continue there till March, when they return northward to breed. A few continue in Mainland, one of the Orkneys, and breed in the little islands of the fresh-water lochs; but the principal part of them retire at the approach of spring. They are called the Countryman's Almanack; for their quitting the isle is said to presage good, and their arrival bad weather*.

In Iceland these birds are an object of chace. In August they lose their feathers to such a degree as not to be able to fly. The natives, at that season, resort in great numbers to the places where they most abound; and come provided with dogs, and active and strong horses, trained to the sport, and capable of passing nimbly over the boggy soil and marshes. The Swans will run as fast as a tolerably quick horse. The greater numbers are taken by the dogs, that are taught to catch them by the neck; which causes them to lose their balance, and become an easy prey.

Notwithstanding their size these birds are so extremely swift on the wing, when in full feather, as to make them more difficult to shoot than almost any others, it being frequently necessary to take sight ten or twelve feet before their bills. This, however, is only when they are flying before the wind in a brisk gale, at which time they seldom fly at a less

* Martin's Voyage to the Western Isles, 71.

rate than a hundred miles an hour: but when flying across the wind or against it, they are not able to make any great progress*.

This species has several distinctions from that called by us the Tame Swan; but the most remarkable one is the strange figure of the windpipe, which falls into the chest, then turns back like a trumpet, and afterwards makes a second bend to join the lungs. By this curious construction the bird is enabled to utter a loud and shrill note. The other Swan on the contrary, is the most silent of birds; it can do nothing more than hiss, which it does on receiving any provocation.—The vocal Swan emits its loud notes only when flying, or calling: its sound is, *whoogh, whoogh*, very loud and shrill, but not disagreeable when heard high in the air, and modulated by the winds.—The Icelanders compare it to the notes of the violin: they hear it at the end of their long and gloomy winter, when the return of the Swans announces the return of summer: every note therefore must be melodious which presages a speedy thaw, and the release from their tedious confinement.

It is from this species alone that the ancients have given the fable of the Swan being endowed with the powers of melody. Embracing the Pythagorean doctrine, they made the body of this bird the mansion of the souls of departed poets; and, after that, attributed to the birds the same faculty of harmony which their inmates possessed in a pre-existent state.

* Hearne, 436.

The vulgar, not distinguishing between sweetness of numbers, and melody of voice, thought that real which was only intended figuratively. The Mute or Tame Swan never frequents the Padus; "and I am almost equally certain, (says Mr. Pennant,) that it never was seen on the Cayster, in Lydia; each of them streams celebrated by the poets for the great resort of Swans.—The Padus was styled *Oloriferus* from the numbers which frequented its waters; and there are few of the poets, either Greek or Latin, who do not make them its inhabitants*."

THE TAME OR MUTE SWAN†.

The Mute Swans are found wild in Russia and Siberia: in England they are very common in a domestic state. They are seen in great plenty on the Thames, where they are esteemed royal property, and it is accounted felony to steal their eggs. In the reign of Edward the Fourth, Swans were held in such estimation that "no person who possessed a freehold of less than the clear yearly value of five marks" was permitted to keep any.

Nothing can exceed the beauty and elegance with which the Swan rows itself along in the water, throwing itself before the spectators into the proudest attitudes imaginable; and there is not perhaps in all nature a more lively or striking image of dignity and grace. In the exhibition of its form, there are

* Penn. Arct. Zool. ii. 262.

† Synomyns.—Anas olor. *Linn.*—Cygne. *Buff.*—Tame Swan, Mute Swan. *Penn.*

no broken or harsh lines, no constrained or catching motions, but the roundest contour and the easiest transitions imaginable: the eye wanders over every part with pleasure, and every part takes new grace with new motion.

> The Swan with arched neck
> Between her white wings mantling, proudly rows
> Her state with oary feet.

The Swan will swim faster than a man can walk; it is however but an inelegant figure on land. It is very strong, and at times extremely fierce; and has not unfrequently been known to throw down and trample upon youths of fifteen or sixteen years of age; and an old Swan we are told, is able to break the leg of a man with a single stroke of his wing. —A female whilst in the act of sitting observed a fox swimming towards her from the opposite shore; she instantly darted into the water, and, having kept the animal at bay for a considerable time with her wings, at last succeeded in drowning him; after which, in the sight of several persons, she returned in triumph. This circumstance took place at Pensy, in Buckinghamshire*.

Swans are very long-lived, sometimes arriving at the great age of a hundred years. The flesh of the old birds is hard and ill-tasted, but that of the young, or Cygnets, was formerly much esteemed: at present Cygnets are fattened near Norwich, but chiefly for the tables of the corporation of that place. Per-

* Latham's second Supplement, 342.

sons who have property on the river there take the young birds and send them to some one who is employed by the corporation, to be fed, and for his trouble he is paid about half a guinea each. They were a few years ago valued at a guinea a piece, but when sold they now bring much more.

Near Abbotsbury in Dorsetshire there is a noble swannery, the property of the earl of Ilchester, where there are six or seven hundred birds kept. The royalty belonged anciently to the abbot, when there were frequently above double this number.

The Swan makes its nest of grass among reeds, and in February begins to lay, and deposits an egg every other day till there are six or eight. These occupy six weeks in hatching. Dr. Latham says, he knows two females that for three or four years past have agreed to associate, and have had each a brood yearly, bringing up together about eleven young: they sit by turns, and never quarrel*.—When in danger, the old birds carry off the young on their backs.

THE SNOW GOOSE†.

This is about the size of the Common Goose. The upper mandible of the bill is scarlet, and the lower whitish. The general colour of the plumage is white, except the first ten quills of the wings, which are black with white shafts. The young are of a blue colour till they are a year old. The legs are red.

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* Second Supplement, 342.

† SYNONYMS.—Anas hyperborea. *Linn.*—White Brant. *Lawson.*——Snow Goose. *Penn.*

These birds are very numerous about Hudson's Bay, where they are migratory, going farther north to breed. They are also found in the northern parts of the old continent.

This species of goose has so little of the shyness of the others, that they are taken in the most ridiculous manner imaginable, about Jakut, and the other parts of Siberia which they frequent. The inhabitants place near the banks of the rivers a great net, in a straight line, or else form a hovel of skins sewed together. This done, one of the company dresses himself in the skin of a white rein-deer, advances towards the flock of geese, and then turns back towards the net or hovel; and his companions go behind the flock, and, by making a noise, drive them forward. The simple birds mistake the man in white for their leader, and follow him within reach of the net, which is suddenly pulled down, and captivates the whole. When he chuses to conduct them to the hovel, they follow in the same manner; he creeps in at a hole left for that purpose, and out at another on the opposite side which he closes up. The Geese follow him through the first; and as soon they are got in, he passes round and secures every one *.—In that frozen climate they afford great subsistence to the natives; and the feathers are an ar-

* Mr. Hearne, in his Journey to the Northern Ocean, p. 440, says, that if these be the same birds as the Snow Goose of Hudson's Bay, they must vary much in their manners; for there they are the shyest and most watchful of all the species of Geese, never suffering an open approach, even so near as within two or three gun-shots.

ticle of commerce. Each family will kill thousands in a season. These, after plucking and gutting them, they fling in heaps into holes dug for that purpose, and cover them with nothing more than earth. This freezes, and forms over them an arch; and whenever the family has occasion to open one of these magazines, they find their provision perfectly sweet and good *.

THE WILD GOOSE †.

These Geese inhabit the fens of England; and are supposed not to migrate, as they do in many countries on the continent. They breed in Lincolnshire and Cambridgeshire: they have seven or eight young, which are sometimes taken, and are easily rendered tame.

They are often seen in flocks of from fifty to a hundred, flying at very great heights, and seldom resting by day. Their cry is frequently heard while they are at an imperceptible distance above. Whether this be their note of mutual encouragement, or only the necessary consequence of respiration, seems somewhat doubtful, but they seldom exert it when they alight in their journeys. On the ground they always arrange themselves in a line, and seem to descend rather for rest than refreshment; for, having continued in this manner for an hour or two, one of

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* Penn. Arct. Zool. ii. 272.

† Synonyms.—Anas Anser. *Linn.*—Oye sauvage. *Buff.*—Grey Lag Goose. *Penn.*—Fen Goose. *Lister.*—Wild Goose, Tame Goose, *var.*

them with a long loud note sounds a kind of charge, to which the rest always punctually attend, and rising in a group they pursue their journey with alacrity. Their flight is conducted with vast regularity: they always proceed either in a line a-breast, or in two lines joining in an angle at the middle. In this order they generally take the lead by turns, the foremost falling back into the rear when tired, and the next in station succeeding to cut the air in his room*.—Their track is generally so high that it is almost impossible to reach them from a fowling-piece, and even when it is, they file so equally that one discharge very seldom kills more than a single bird.

They breed in the plains and marshes about Hudson's Bay in North America; and in some years the young ones are taken in considerable numbers, and are easily tamed. It is, however, extremely singular that they will never learn to eat corn, unless some of the old ones are taken along with them; which is easily done when they are in a moulting state.

Our common Tame Goose is nothing more than this species in a state of domestication.

These birds are no where kept in such vast quantities as in the fens of Lincolnshire, several persons there having as many as a thousand breeders. They are bred for the sake of their quills and feathers, for which they are stripped while alive, once in the year for the quills, and no less than five times for the feathers: the first plucking commences about Lady-

* Pontoppidan, ii. 74.

day, for both; and the other four are between Lady-day and Michaelmas. In general it is said that the birds do not suffer very much, except cold weather sets in, when great numbers are killed in consequence. The old Geese submit quietly to the operation, but the young ones are very noisy and unruly. Mr. Pennant says he once saw this work performed, and observed, that even Goslins of only six weeks old were not spared; for their tails were plucked, as he was informed, to habituate them early to the operation. The possessors, except in this cruel custom of plucking, treat them with great kindness, and lodge them very often even in the same room with themselves.

These Geese breed in general only once a-year, but they sometimes, if well kept, hatch twice in a season. During their sitting each bird has a space allotted to it, in rows of wicker pens, placed one above another; and it is said that the *Gozzard*, or *Gooseherd*, who has the care of them, twice a day drives the whole flock to water, and, bringing them back to their habitations, places every bird (without missing one) in its respective nest.

It is scarcely credible what numbers of Geese are driven from the distant counties to London for sale, frequently two or three thousand in a drove; and in the year 1783 one drove passed through Chelmsford, in their way from Suffolk to London, that contained above nine thousand.

However simple in appearance, or however awkward in gesture, the Goose may be, yet it still retains many marks both of sentiment and understanding.

The courage with which it protects its young, and defends itself against the ravenous birds, and certain instances of attachment, and even of gratitude, which have been observed in it, render our general contempt of the Goose ill-founded. This we shall confirm by relating an instance of warm affection, which was communicated to the Comte de Buffon by a man both of veracity and information. The following are nearly his own words:—"There were two Ganders, a grey and a white one (the latter named *Jacquot*) with three females. The two males were perpetually contending for the company of these three dames. When one or the other prevailed, it assumed the direction of them, and hindered the other from approaching. He who was the master during the night, would not yield in the morning, and the two gallants fought so furiously, that it was necessary to run and part them. It happened one day, that being drawn to the bottom of the garden by their cries, I found them with their necks entwined, striking their wings with rapidity and astonishing force; the three females turned round, as wishing to separate them, but without effect; at last the white Gander was worsted, overthrown, and maltreated by the other. I parted them, happily for the white one, as he would otherwise have lost his life. Then the grey Gander began screaming, and gabbling, and clapping his wings, and ran to join his mistresses, giving each a noisy salute, to which the three dames replied, ranging themselves at the same time round him. Meanwhile poor Jacquot was in a pitiable condition, and, re-

tiring, sadly vented at a distance his doleful cries. It was several days before he recovered from his dejection, during which time I had sometimes occasion to pass through the court where he stayed. I saw him always thrust out from society, and each time I passed he came gabbling to me. One day he approached so near me, and shewed so much friendship, that I could not help caressing him, by stroking with my hand his back and neck, to which he seemed so sensible, as to follow me into the entrance of the court. Next day, as I again passed, he ran to me, and I gave him the same caresses, with which alone he was not satisfied, but seemed, by his gestures, to desire that I should lead him to his mates. I accordingly did lead him to their quarter, and, upon his arrival, he began his vociferations, and directly addressed the three dames, who failed not to answer him. Immediately the grey victor sprung upon Jacquot. I left them for a moment; he was always the stronger; I took part with my Jacquot, who was under; I set him over his rival; he was thrown under; I set him up again. In this way they fought eleven minutes, and, by the assistance which I gave, he obtained the advantage over the grey Gander, and got possession of the three dames. When my friend Jacquot saw himself master, he would not venture to leave his females, and therefore no longer came to me when I passed: he only gave me at a distance many tokens of friendship, shouting and clapping his wings, but would not quit his companions, lest, perhaps, the other should take possession. Things

went on in this way till the breeding season, and he never gabbled to me but at a distance. When his females, however, began to sit, he left them, and redoubled his friendship to me. One day, having followed me as far as the ice-house, at the top of the park, the place where I must necessarily part with him, in pursuing my way to a wood at half a league distance, I shut him in the park. He no sooner saw himself separated from me, than he vented strange cries. However, I went on my road, and had advanced about a third of the way, when the noise of a heavy flight made me turn round my head; I saw my Jacquot four paces from me. He followed me all the way, partly on foot, partly on wing, getting before me, and stopping at the cross-paths to see what way I should take. Our expedition lasted from ten o'clock in the morning till eight in the evening, and yet my companion followed me through all the windings of the wood, without seeming to be tired. After this he followed and attended me every where, so as to become troublesome, I not being able to go to any place without his tracing my steps, so that one day he even came to find me in the church. Another time, as he was passing by the rector's window, he heard me talking in the room; and, as he found the door open, he entered, climbed up stairs, and marching in, gave a loud burst of joy, to the no small affright of the family.

"I am sorry, in relating such pleasing traits of my good and faithful friend Jacquot, when I reflect that it was myself that first dissolved the sweet

friendship; but it was necessary that I should separate him by force. Poor Jacquot fancied himself as free in the best apartments as in his own, and after several accidents of that kind, he was shut up, and I saw him no more. His inquietude lasted above a year, and he died from vexation. He was become as dry as a bit of wood, as I am told, for I would not see him, and his death was concealed from me for more than two months after the event. Were I to recount all the friendly incidents between me and poor Jacquot, I should not, in four days, have done writing. He died in the third year of the reign of friendship, aged seven years and two months."*

THE BERNACLE GOOSE.†

The bill of this bird is very short and black, crossed with a flesh-coloured mark on each side. Part of the head, the chin, throat, under-parts, and upper tail coverts, are white; and the rest of the head, and neck, and the beginning of the back, are black. The thighs are mottled. Round the knee the feathers are black, and the lower feathers of the back are the same, edged with white. The wing-coverts and scapulars are blue grey; the ends black, fringed with white at the tip. The rump, tail, and legs, are black.

This species is not uncommon on many of the northern and western coasts of this kingdom, in winter; but it is scarce in the south, and only seen

* Buffon's Birds, vol. 6, p. 38. Note

† SYNONYMS.—Anas Erythopus. *Linn.*—Bernacle. *Buff.*—Bernacle, or Clakis. *Willughby.*

in inclement seasons. They leave our island in February, and retire northward to breed.

Of all the marvellous productions which ignorance, ever credulous, has so long substituted for the simple and truly wonderful operations of nature, the most absurd, perhaps, and yet the most celebrated, is the assertion of the growth of these birds, in a kind of shell, called *Lepas-anatifera* (Goose-bearingshell) on certain trees on the coasts of Scotland and the Orkneys, or on the rotten timbers of old ships.

Of the numerous writers who have mentioned and credited these circumstances, we shall content ourselves with giving the accounts of only three, who all speak positively upon the subject. One of these, Maier, who has written a treatise expressly on this bird, says, that it certainly originates from shells: and, what is still more wonderful, Maier says, he opened an hundred of the *Goose-bearing* shells in the Orkneys, and found in all of them the rudiments of the bird completely formed.

Our countryman, Gerard, is another writer on this subject; his account of this wonderful transformation we shall insert in his own words, which have been often quoted:—"What our eyes have seen, and our hands have touched, we shall declare. There is a small island in Lancashire, called the *Pile of Foulders,*' wherein are found broken pieces of old and bruised ships, some whereof have been cast thither by ship-wrecks; also the trunks and bodies, with the branches of old and rotten trees, cast up there likewise; whereon is found a

certain spume or froth, that in time breedeth unto certain shells, in shape like those of the Muscle, but sharper pointed, and of a whitish colour, one end whereof is fastened unto the inside of the shell, even as the fish of Oysters and Muscles are; the other end is made fast unto the belly of a rude masse or lump, which in time cometh into the shape and form of a bird. When it is perfectly formed, the shell gapeth open, and the first thing that appeareth is the aforesaid lace or string; next cometh the legs of the bird hanging out; and, as it groweth greater, it openeth the shell by degrees, till at length it has all come forth, and hangeth only by the bill. In short space after it cometh to full maturitie, and falleth into the sea, where it gathereth feathers, and groweth to a fowle, bigger than a Mallard and lesser than a Goose, having black legs, and bill or beake, and feathers black and white, spotted in such manner as our Mag-pie, called in some places *Pie-annet*, which the people of Lancashire call by no other name than Tree-goose; which place aforesaid, and all those places adjoyning, do so much abound therewith, that one of the best is bought for three-pence. For the truth hereof, if any doubt, may it please them to repair to me, and I shall satisfy them by the testimonies of good witnesses."

The following is Sir Robert Murray's account of the Bernacle, inserted in the Philosophical Transactions:—"In the Western Islands of Scotland, the West Ocean throws upon their shores great quantities of very large weather-beaten timber; the most

ordinary trees are fir and ash. Being in the island of East, I saw lying upon the shore a cut of a large fir-tree, of about two feet and a half in diameter, and nine or ten feet long, which had lain so long out of the water, that it was very dry; and most of the shells that had formerly covered it were worn or rubbed off. Only on the parts that lay next the ground there still hung multitudes of little shells: they were of the colour and consistence of Muscle-shells. This *Barnacle-shell* is thin about the edges, and about half as thick as broad. Every one of the shells hath some cross-seams or sutures, which, as I remember, divide it into five parts.

"These parts are fastened one to another, with such a film as Muscle-shells are.

"These shells are hung at the tree by a neck, longer than the shell, of a kind of filmy substance, round and hollow, and creased not unlike the wind-pipe of a Chicken, spreading out broadest where it is fastened to the tree, from which it seems to draw and convey the matter which serves for the growth and vegetation of the shell and little bird within it.

"In every shell that I opened I found *a perfect Sea-fowl*: the little bill, like that of a Goose, the eyes marked; the head, neck, breast, wing, tails, and feet, formed; the *feathers* every where perfectly shaped, and blackish coloured; and the feet like those of other water-fowl, to my best remembrance."

Few subjects seem to have been more circumstantially related, or to rest on better evidence than the above; so natural to man is credulity, which

passes all bounds, where the prodigy of an event takes firm hold of the imagination, and lays the understanding asleep. Such are part of the wild chimeras that have been retailed concerning the origin of the Bernacles; and as these fables once enjoyed great celebrity, and were admitted by very many authors, we have been induced to relate them here, only to shew how contagious the errors of science are, and how prone men are to the fascinations of the marvellous.

THE CANADA GOOSE.*

This is somewhat bigger than the tame Goose. The bill, the head, and the neck, are black; and under the throat is a broad white band, like a crescent. The breast, the upper part of the belly, the back, and wing-coverts, are dusky brown. The lower parts of the neck and belly, and upper tail-coverts, white. The quills and tail are black, and the legs dark lead-colour.

The Canada Geese inhabit the northern parts of North America. Immense flocks appear annually in the spring in Hudson's Bay, and pass far to the north to breed; and return southward in the autumn. The English people at Hudson's Bay depend greatly on Geese, of this and other kinds, for theirsupport; and in favourable years they often kill three or four thousand, which they salt and barrel. Their arrival is impatiently waited—it is the harbinger of the spring,

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* Synonyms.—Anas Canadensis. *Linn.*—Oye à Cravate. *Buff.*—Canada Goose. —*Latham*,

and that month is named by the Indians the *Goose* Moon.

They send out their servants, as well as Indians, to shoot these birds on their passage. It is in vain to pursue them; the men therefore form a row of huts made of boughs, at musquet-shot distance from each other, and place them in a line across the vast marshes of the country. Each hovel, or, as it is called, *stand*, is occupied by only a single person. These attend the flight of the birds, and on their approach mimic their cackle so well, that the Geese will answer, wheel and come nearer the stand. The sportsman keeps motionless, and on his knees, with his gun cocked the whole time; and never fires till he has seen the eyes of the Goose. He fires as they are going from him, then picks up another gun that lies by him, and discharges that. The Geese that he has killed, he sets up on sticks, as if alive, to decoy others: he also makes artificial birds for the same purpose. In a good day (for they fly in very uncertain and unequal numbers) a single Indian will kill two hundred.—Notwithstanding each species of Goose has a different call, yet the Indians are admirable in their imitation of every one.*

THE EIDER DUCK.†

This species is about twice the size of the common Duck. Its bill is black, and the feathers of the

* Penn. Arct. Zool. ii. 266.

† SYNONYMS.—Anas Mollissima. *Linn.*—Oye à Duvet, ou Eider. *Buff.*—Eider, or Cuthbert Duck. *Willughby.*—Great Black and White Duck. *Edwards.*—Colk. Martin.—Duntur Goose. *Sibbald.*——*Penn. Brit. Zool.* ii. *tab.* 95.

forehead and cheeks advance far into the base. In the male the feathers of part of the head, of the lower part of the breast, the belly, and the tail, are black, as are also the quill-feathers of the wings; and nearly all the rest of the body is white. The legs are green. The female is of a reddish brown, variously marked with black and dusky streaks. It is principally found in the western isles of Scotland, and on the coasts of Norway, Iceland, and Greenland.

In Iceland the Eider Ducks generally build their nests on little islands, not far from the shore, and sometimes even near the dwellings of the natives, who treat them with so much attention and kindness, as to render them nearly tame.

Sometimes two females will lay their eggs in the same nest, and they always agree remarkably well together.

As long as the female is sitting, the male continues on the watch near the shore; but as soon as the young are hatched, he leaves them. The mother, however, remains with them a considerable time afterwards. It is curious to observe her manner of leading them out of the nest, almost as soon as they creep from the eggs; and, going before them to the shore; they trip after her; and, when she comes to the water side, she takes them on her back, and swims a few yards with them, when she dives, and the young ones are left floating on the surface, and are obliged to take care of themselves. They are seldom seen afterwards on land.

From these birds is produced the soft down, so

well known by the name of *eider*, or *edder down*. This is taken from their breast in the breeding season, to line their nests, making with it a soft bed for their young. When the natives come to the nest, they carefully remove the female, and take away the superfluous down and eggs; after this they replace the female, when she begins to lay afresh, and covers her eggs with new down, which she plucks from her body: when this falls short, or she has no more left, the male comes to her assistance, and covers the eggs with his down, which is white, and easily distinguished from that of the female. When the young ones leave the nest, which is about an hour after they are hatched, the nest is once more plundered.

The best down, and the most eggs, are got during the first three weeks of their laying; and it has generally been observed, that these birds lay the greatest number of eggs in rainy weather.

One female, during the time of laying, generally gives half a pound of down, which, however, is reduced to one half after it is cleansed.*

The eider-down is of such value, when in its purity, that it is sold in Lapland for two rix-dollars per pound. It is extremely soft and warm, and so light and expansive, that a couple of handsful squeezed together, are sufficient to fill a down quilt, which is a covering like a feather-bed, used in those cold countries, instead of a common quilt or blanket†.

* Von Troil, 143. † Conset, 77.

There are generally exported from Iceland, every year, by the Iceland Company at Copenhagen, 1500 or 2000 pounds weight of down, cleansed and uncleansed, exclusive of what is privately exported by foreigners. In the year 1750 this company sold so much in quantity of this article, as produced 3747 rix-dollars, besides what was sent directly to Gluckstadt*.

The Greenlanders kill these birds with darts, pursuing them in their little boats, and watching their course, when they dive, by the air-bubbles, always striking at them when they rise to the surface wearied. The flesh is valued as food, and their skins are made into warm and comfortable under garments†.

THE WILD DUCK.‡

Wild Ducks frequent the marshy places in many parts of this kingdom, but no where in greater plenty than in Lincolnshire, where prodigious numbers are annually taken in the decoys. In only ten decoys, in the neighbourhood of Wainfleet, as many as 31,200, have been taken in one season. In Latham's Synopsis, is inserted an extract from the Antiquarian Society of Spalding, concerning the taking of Ducks there, which is as follows:—"At the

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* Von Troil. † Penn. Arct. Zool. ii. 277.

‡ SYNONYMS.—Anas Boschas. *Linn.*—Canard Sauvage. *Buffon.*—Common Wild Duck and Mallard. Common Tame Duck. *Willughby.*—*Penn. Brit. Zool.* ii. *tab.* 97.

ducking on Thursday last, were taken up one hundred and seventy-four dozen of Mallards, or Drakes, moulting; and on Monday forty-six dozen and a half; in all 2630 birds."

Wild Ducks are very artful birds. They do not always build their nest close to the water, often at a good distance from it; in which case the female will take the young in her beak, or between the legs, to the water. They have been known sometimes to lay their eggs in a high tree, in a deserted Magpie or Crow's nest; and we have likewise been informed of an instance of one being found at Etchingham, in Sussex, sitting upon nine eggs, in an oak, twenty-five feet from the ground: the eggs were supported by some small twigs, laid crossways.

We are informed, that at Bold, in Lancashire, there were formerly great quantities of Wild Ducks, during the summer-time, in the ponds and moat near the Hall. These, it is said, used regularly to be fed. A man beat with a stone on a hollow wooden vessel, and immediately the Ducks would come round him. He scattered corn among them, which they gathered with as much quietness and familiarity, as might be expected from tame Ducks. As soon as they had finished their repast, they returned to their accustomed haunts*.

Prodigious numbers of these birds are taken in decoys, in Picardy, in France, particularly on the river Somme. It is customary there, to wait

* Leigh's Natural History of Cheshire, &c. 163.

for the flock's passing over certain known places, and the sportsman, having a wicker cage, containing a quantity of tame birds, lets out one at a time, which enticing the passengers within gun-shot, five or six are often killed at once, by an expert marksman. They are now and then also taken by hooks, baited with raw meat, which the birds swallow while swimming on the water.

Other methods of catching Ducks and Geese are peculiar to certain nations: one of these, from its singularity, seems worth mentioning. A person wades into the water up to the chin, and having his head covered with an empty *calabash*, approaches the place where the Ducks are; when they, not regarding an object of this kind, suffer the man freely to mix with the flock; after which he has only to pull them by the legs under the water, one after another, and fix them to his belt, till he is satisfied, returning as unsuspected by the remainder as when he first came among them*.

This method is frequently practised on the river Ganges, the earthen vessels of the Gentoos being used instead of calabashes. These vessels are what the Gentoos boil their rice in: after having been once used, they are looked upon as defiled, and are thrown into the river as useless: the Duck-takers find them convenient for their purpose, as the Ducks seeing them constantly float down the stream, look upon them as objects of full as little regard as a calabash.

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* Navarette's Account of China, in Churchill's Voyages, i. 45.

The Chinese make great use of Ducks, but prefer the tame to the wild ones. It is said that the major part of the Ducks in China are hatched by artificial heat. The eggs being laid in boxes of sand, are placed on a brick hearth, to which is given a proper heat during the required time for hatching. The Ducklings are fed with Craw-fish and Crabs, boiled and cut small, and afterwards mixed with boiled rice; and in about a fortnight they are able to shift for themselves, when the Chinese provide them an old *step-mother*, who leads them where they are to find provender; being first put on board a *sampane* or boat, which is destined for their habitation, and from which the whole flock, often to the amount of three or four hundred, go out to feed, and return at command. This method is used nine months out of the twelve, (for in the colder months it does not succeed), and is so far from a novelty, that it may be every where seen; but more especially about the time of cutting the rice, and gleaning the crop, when the masters of the Duck-sampanes row up and down the river, according to the opportunity of procuring food, which is found in plenty, at the tide of ebb, on the rice plantations, as they are overflowed at high water. It is curious to observe how the Ducks obey their masters; for some thousands, belonging to different boats, will feed at large on the same spot, and on a signal given, will follow their leader to their respective sampanes, without a single stranger being found among them. This is still more extraordinary, if

we consider the number of inhabited sampanes* on the Tigris, supposed to be no less than *forty thousand*, which are moored in rows close to each other, with here and there a narrow passage for boats to pass up and down the river. The Tigris at Canton is somewhat wider than the Thames at London, and the whole river is there covered in this manner for the extent of at least a mile.

THE GARGANEY.†

This bird is somewhat larger than the Teal. The bill is black; the crown and hind head are of a dusky brown: on the chin is a large black spot; and from the eye a white streak passes to the back of the head. The cheeks and neck are pale purple and white. The breast is of a light brown, crossed with semicircular bars of black; and the belly is white having its lower parts varied with dusky specks. The legs are lead coloured.

A couple of these birds were kept two months, by M. Frisch, who has given us the following detail of their mode of living in this sort of insipient domestication. "I presented to them, (he says) different seeds, and they would touch none; but scarcely had I set beside their water-trough a bason

* Sampane is a common name for a boat: the inhabited ones contain each a separate family, of which it is the only dwelling; and very many of the Chinese pass almost their whole lives in this manner on the water.

† SYNONYMS.—Anas Querquedula. *Linn.*—Sarcelle. *Briss.*—Pied Wigeon. Summer Teal. *Montagu.*—Garganey. *Penn.*——*Penn. Brit. Zool.* ii. *tab.* 101.

filled with millet, than they both ran to it. At every billful which they took, each went to the water, and they carried as much of it in a short time as completely to soak the millet; yet the grain was not moistened sufficiently to their mind, and I saw them busied in carrying millet and water to the ground of their pen, which was of clay, and when the bottom was softened and tempered enough, they began to dabble, and made a pretty deep cavity, in which they ate their millet, mixed with earth. I put them in a room, and they carried in the same way, though to little purpose, the millet and water to the deal floor. I led them on the grass, and they seemed to do nothing but dig for seeds, without eating the blades, or even Earth-worms. They pursued Flies, and snapped at them like Ducks. When I delayed to give them their accustomed food, they called for it with a feeble hoarse cry, *quoak*, repeated every minute. In the evening they lay in the corners; and even during the day, when any person went near them, they hid themselves in the narrowest holes. They lived thus till the approach of winter, but when the severe cold set in, they both died suddenly."*

* Buffon.

THE AUK TRIBE.

THE Auks are for the most part inhabitants of the Northern ocean. They breed in holes, which they sometimes dig in the earth, or in the fissures of rocks, and lay but one egg. They generally rest in their holes during the night. Their feet are placed behind the centre of gravity, which makes some of the species stand with their heads almost upright. In their manners they generally appear very stupid and foolish.

The bill is strong, thick, convex, and, except in a very few species, compressed on the sides, and crossed with transverse furrows. The nostrils are linear, and placed parallel to the edge of the bill. They have three toes, all placed forward.

THE PUFFIN AUK.*

This bird is about twelve inches in length. The bill is an inch and a quarter long, much compressed on the sides, and near an inch and a half deep at the base, from whence both mandibles tend to a point, which is a little curved; across these are oblique furrows: the half of the bill next the point is red; and that next the base blue grey. The top of the head, the hind part of the neck, and all the upper

* SYNONYMS. — Alca Arctica. *Linn.* — Macareux. *Buff.*—Puffin. *Penn.*—Coulterneb. *Willughby.*—Bowger. *Martin.*

parts of the plumage are black; which colour passes also round the throat like a collar. The sides of the head, the chin, and all the under parts, are white. The legs are orange.

The Puffin Auks appear in some parts of our coast in the beginning of April. Their first employment is the forming of burrows in the earth, or sand, for their young, which falls to the share of the males, who are so intent on the business, as to suffer themselves at that time to be taken with the hand. Some, where there is opportunity, save themselves the trouble of forming holes, by dispossessing the Rabbets of theirs.

They lay one white egg; and males as well as females perform the office of sitting, relieving each other when they go to feed. The young are hatched in the beginning of July. The parents have the strongest affection for them, and, if lain hold of by the wings, will give themselves most cruel bites on any part of the body they can reach, as if actuated by despair; and, when released, instead of flying away, will often hurry again into the burrow to their young. The noise they make when caught is horrible, not unlike the efforts of a dumb person to speak. This affection ceases at the time of remigration, which takes place about the middle of August. They then go off, to a single bird, and leave behind the unfledged young of the latter hatches, a prey to the Peregrine Falcon, which watches the mouth of the holes for their appearance, compelled, as they must soon be, by hunger, to come out.

The food of these birds is Sprats or sea-weeds, which makes them excessively rank; yet the young are pickled and preserved by spices, and by some people are much admired.

The Kamtschadales and Kuriles wear the bills of these birds fastened about their necks with straps. The priests put them on with a proper ceremony, and the persons are supposed to be always attended by good fortune so long as they retain them there.*

It appears certain that the Puffins do not breed till their third year. The proof of this arises from the observations made by the Rev. Hugh Davies, of Aber, in Caernarvonshire, on the different forms of the bills, among the thousands of this species which, in the year 1776, he saw wrecked on the Welsh coast near Criccieth. He saw the beach, for miles, covered with dead birds, among which were Puffins, Razor-bills, Guillemots, and Kittiwakes; as well as Tarrocks, Gannets, Wild Geese, Bernacles, Brent Geese, Scoters, and Tufted Ducks. This unusual accident he conjectured to be owing to a most severe storm of frost that had overtaken both the migrants and re-migrants. From the Puffins he here found, he remarked the different forms of their bills in their several periods of life. Those that he supposes to have been of the first year, were small, weak, destitute of any furrow, and of a dusky colour; those of the second year were considerably stronger and larger,

* Grieve's Kamtschatka, 153.

lighter coloured, and with a faint rudiment of a furrow at the base; those of the more advanced years had vivid colours, and were of great strength.*

THE PERROQUET AUK†

Is about the size of a Blackbird. The bill is much compressed, and convex both above and beneath. The nostrils are placed in the middle of it, and pervious, and above these is a furrow that reaches from the base to the middle. The colour of the bill is deep red. From the hinder part of the eye springs a slender tuft of white feathers, which hangs loosely on the neck. The upper parts of the plumage, and the neck, are black, and the under parts, from the breast, white. The wings are short. The legs are of a dirty yellow, and the webs of the feet brown.

This species is found in flocks in Kamtschatka, in the isles towards Japan, and on the western shores of America. In the nights they harbour in the crevices of rocks. Like most of the tribe they are stupid birds, as the following ridiculous method of catching them sufficiently proves:—One of the natives places himself in the evening among the rocks, under a loose fragment of fur, of a particular shape, with large open sleeves, when the birds, returning to their lodging-places at dusk, run under the skirts and up the arm-holes to shelter during the night; the man concealed beneath kills

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* Pennant's Tour in North Wales, ii. 251.

† SYNONYMS.—Alca Psitticula. *Linn.*

them as fast as they enter, and by this means as many are often taken in one evening as he can carry away. Their stupidity occasions them likewise very often to fly on board a ship at such times, mistaking it for a roosting-place; by which navigators have sometimes been taught to avoid the danger of falling in too near with land, either in the evenings, or on the approach of storms.*

THE PENGUIN TRIBE.

THE Penguins seem to hold the same place in the southern parts of the world, that the Auks do in the northern, being only found in the temperate and frigid zones of the southern hemisphere. They resemble them in almost all their habits, walking erect, and being very stupid: they also resemble them in their colour, mode of feeding, and making their nests. They are, from the extreme shortness of their wings, altogether incapable of flying. They swim with great swiftness, and are fortified against the effects of a long continuance in the cold water by abundance of fat. They hatch their young in an erect position; and cackle like Geese, but in a hoarser tone.

Their bill is strong, straight, furrowed on the sides, and bends towards the point. The nostrils are linear, and placed in the furrows. The

* Penn. Arct. Zool. ii. 226.

tongue is covered with strong spines, pointing backwards. The wings are small, not unlike fins, covered with no longer feathers than the rest of the body. The body is clothed with thick short feathers, that have broad shafts, and are placed as compactly as scales. The legs are short and thick, placed backwards, near the tail. The toes are four, all placed forwards; the interior ones are loose, and the rest webbed.—The tail is very stiff, consisting of broad shafts scarcely webbed.

THE CRESTED PENGUIN.*

This beautiful bird is near two feet in length.—The bill is red, and three inches long; the upper mandible curved at the end, and the lower obtuse. The head, neck, back, and sides, are black. Over each eye is a stripe of pale yellow feathers, which lengthens behind into a crest about four inches long; this is decumbent, but can be erected at pleasure: the feathers of the head above this are longer than the rest, and stand upward. The wings are black on the outside; but the edges and the insides are white. The legs are orange-coloured, and the claws dusky. The female is destitute of the crest.

The Crested Penguins are inhabitants of several of the South Sea islands. They have the names of Hopping Penguins, and Jumping Jacks, from their action of leaping quite out of the water, sometimes

* Synonyms.—Aptenodytes Chrysocome. *Linn.*—Manchot Sauteur. *Buff.*—Crested Penguin. *Latham.*

three or four feet, on meeting with any obstacle in their course; and, indeed, they frequently do this without any other apparent cause than the desire of advancing onwards by that means. All the Penguins, while swimming, sink above the breast, the head and neck only appearing out of the water, and they row themselves along with their finny wings as with oars.

This species seems to have a greater air of liveliness in its countenance than almost any of the others, yet it is still a very stupid bird, and so regardless of its own safety, as even to suffer any person to lay hold of it. When provoked, it erects its crest in a very beautiful manner; and we are told, that, when attacked by our voyagers, these birds ran at them in flocks, pecked their legs, and spoiled their clothes. "When the whole herd was beset (says Mr. Forster, in his account of one of the South Sea islands) they all became very bold at once, and ran violently at us, biting our legs, or any part of our clothes."

Their sleep is extremely sound; for Dr. Sparrmann, accidentally stumbling over one of them, kicked it several yards without disturbing its rest; nor was it till after being repeatedly shaken that the bird awoke.

They are very tenacious of life; Mr. Forster left a great number of them apparently lifeless from the blows they had received, while he went in pursuit of others; but they all afterwards got up, and marched off with the utmost gravity.*

* Forster's Voyage, ii. 519.

They form their nests among those of the birds of the Pelican tribe, and live in tolerable harmony with them. The female generally lays only a single egg. Their nests are holes in the earth, which they easily form with their bills, throwing back the dirt with their feet.—They are often found in great numbers on the shores where they have been bred.

Penrose mentions a species of Penguin that resort to certain places of the Falkland Islands in incredible numbers, and lay their eggs.—These places, he tells us, their long residence had entirely freed from grass, and he has given to them the name of *towns*. Their nests were composed of mud raised into hillocks, about a foot high, and placed close to each other. "Here (he says) during the breeding season, we were presented with a sight that conveyed a most dreary, and, I may say, awful idea of the desertion of these islands by the human species:—a general stillness prevailed in these towns; and whenever we took our walks among them, in order to provide ourselves with eggs, we were regarded, indeed, with side-long glances, but we carried no terror with us.

"The eggs are rather larger than those of a Goose, and laid in pairs. When we took them once, and sometimes twice in a season, they were as often replaced by the birds; but prudence would not permit us to plunder too far, lest a future supply in the next year's brood might be prevented."*

* Penrose's Account of an Expedition to the Falkland Islands in the year 1772.

THE PETREL TRIBE.

THESE birds all frequent the ocean, and are seldom to be seen on shore except during the breeding season. Their legs are bare of feathers a little above the knee. They have a singular faculty of spouting from their bills, to a considerable distance, a large quantity of pure oil: this they do, by way of defence, into the face of any one that attempts to annoy them. This oil has been frequently used in medicine, and some writers say, with success.

The bill is somewhat compressed; the mandibles are equal, and the upper one is hooked at the point. The nostrils form a truncated cylinder, lying over the base of the bill. The feet are webbed, and, in the place of a hind toe, have a spur pointing downwards.

THE STORMY PETREL.*

This Petrel is not larger than a Swallow; and its colour is entirely black, except the coverts of the tail, the tail itself, and the vent feathers, which are white. Its legs are long and slender.

* SYNONYMS.—Procellaria Pelagica. *Linn.*—Oiseau de Tempête. *Buffon.*—Petrel. *Dampier.*—Storm Finch, or Little Petrel.—Small Petrel. *Edwards.*—Stormy Petrel. *Penn.*—*Penn. Brit. Zool.* ii. *tab.* 91.

It is found in most seas, and frequently at a vast distance from the land, where it braves the utmost fury of the storms, sometimes skimming with incredible velocity along the hollows of the waves, and sometimes over their summits. It often follows vessels in great flocks to pick up any thing that is thrown overboard; but its appearance is always looked upon by the sailors as the sure presage of stormy weather in the course of a few hours after. It seems to seek for protection from the fury of the wind in the wake of the vessels; and for the same reason it very probably is, that it often flies along between two surges.

The nests of these birds are found in the Orkney Islands, under loose stones, in the months of June and July.—They live chiefly on small fish, and, although mute by day, are very clamorous during the night.

The inhabitants of the Feroe islands are said to draw a wick through the bird, which, being lighted at one end, serves for a candle, the flame being fed by the fat and oil of the body.

THE NORFOLK-ISLAND PETREL.*

The length of this bird is about sixteen inches. The bill is about an inch and a half long, black, and much hooked at the end. The head, as far as the

* Synonyns.—Procellaria Alba. *Linn.*—White-breasted Petrel. *Latham.*—Norfolk-Island Petrel. *Cook's Voyage.*

eyes, and the chin, are mottled in waves of brown and white: the rest of the body is of a sooty brown above, and a deep ash-colour beneath. The wings, when closed, exceed the tail by an inch. The legs are of a pale yellow, and part of the toes and webs black.

These Petrels are found in Norfolk Island in great plenty, where they burrow in the sand like Rabbets. On Mount Pit, the highest land in the island, the ground was as full of holes as a Rabbet-warren, and an immense number of aquatic birds burrowed and built their nests in them. These, during the day, were at sea, but as night approached they returned in vast flocks. The settlers lighted small fires every night on this mount, about which the birds dropped as fast as the people could pick them up and kill them, for the wings of sea birds are generally so long as to prevent their rising till they can ascend some small elevation. Hunter says that 18,000 different species were killed in the space of about six weeks.*

THE ALBATROSS TRIBE.

THERE are but four species of Albatross, of which three are found principally in the seas of the

* History of Port Jackson, quoted in Latham's Second Supplement, p. 334.

hot climates, and the fourth is confined to those within the Antarctic Circle. Their bill is straight; the upper mandible hooked at the point, and the lower truncated, or appearing as if cut off. The nostrils are oval, wide, prominent, and lateral: the tongue is very small; and the feet have three toes, all placed forward.

THE MAN-OF-WAR-BIRD.*

These birds are found in most seas, but chiefly in those within the Tropics; they are often seen about the Cape of Good Hope, and towards the end of July collect in great numbers in Kamtschatka, and the seas which separate that part of Asia from America. In size they are sometimes as large as a Swan. Their general colour is white, the upper parts marked with black lines. The quill-feathers are black; and the tail is rounded, and of a lead colour. The bill is of a pale yellow, and the legs are flesh-coloured.

They are exceedingly voracious, and feed on various species of fish and molluscæ. The shoals of Flying-fish, when persecuted by their enemies of the deep, make their appearance for a short flight in the air, and suffer greatly from the voracity of these birds. They also often pursue the shoals of Salmon into the mouths of the large rivers, and so gorge themselves as, notwithstanding their other-

* Synonyms.—Diomedia Exulans. *Linn.*—Albatross. *Buff.*—Wandering Albatross. *Latham.*—Man of War-bird. *Alcin*

wise extraordinary powers of flight, to be prevented by their weight and consequent stupidity even from rising.

In the West Indies the appearance of these birds is often said to foretel the coming in of ships, which indeed is sometimes true, and arises from a very natural cause. They always fish in fine weather, so that when the wind is boisterous out at sea, they retire into the harbours, where they are protected by the land; and the same wind that blows them in, brings also very often vessels to seek a retreat from the storm.*

Their voice resembles very much the braying of an Ass. They build their nests in South America, about the end of September: these are formed of earth, on the ground, and are from one to three feet high. The eggs are as large as those of the Goose, and have the singular property of their white not becoming hard by boiling. When attempted to be seized, these birds make a vigorous defence with their bills.

Many of the Indians set a high value on their feathers, which they use for arrows, as they last much longer than those of any other birds.† The natives of the South Sea Islands watch the arrival of these birds at the rainy season, and, when they observe them, they launch from their canoes a light float of wood into the water, baited with a small fish. When one of them approaches it, a man stands

* Sloane, i. 30. † Ibid.

ready with a pole, of about eighteen feet long, and on its pouncing, he strikes at it, and seldom fails in bringing it down. If, however, he misses his aim, he must wait for some other bird, for that will no more be tempted to approach. The cock bird is reckoned the most valuable; and a large Hog will sometimes be exchanged for one of them.*

The inhabitants of Kamtschatka make buoys to their nets of the intestines of the Man-of-war-birds, which they blow up like bladders. They also make tobacco-pipes and needle-cases of the bones of the wings; and use them for heckling the glass, which serves them instead of flax. The flesh is very hard and dry.

THE PELECAN TRIBE.

IN this tribe the bill is long and straight; and the end either hooked, or sloping. The nostrils are placed in the furrow that runs along the sides of the bill, and in most of the species are not distinguishable. The face, except in two species, is destitute of feathers. The gullet is naked, and capable of great extension. The number of toes is four, and these are all webbed together.

The Pelecans are gregarious, and, in general, remarkable for their extreme voracity. They are

* Wilson, 382.

very expert in seizing fish with their long and apparently unwieldy bills; and many of the species are rendered of use to mankind, by being trained to catch fish. They, in general, keep out far at sea, but some of them are found occasionally in the interior parts of continents.

THE WHITE PELECAN.*

This Pelecan, when full grown, is much larger than a Swan. The bill is about sixteen inches long, and the skin between the sides of the lower mandible is very flaccid and dilatable, reaching eight or nine inches down the neck; this is bare of feathers, and capable of containing many quarts of water. The tongue is so small as scarcely to be distinguishable. The sides of the head are naked; and on the back of the head is a kind of crest. The whole plumage is whitish, except some parts of the wings which are black. The legs are of a lead colour, and the claws grey.

The bag in the lower mandible of the bill is one of the most remarkable members that any animal is furnished with. Though it wrinkles up nearly into the hollow of the chap, and the sides to which it is attached are not, in a quiescent state, above an inch asunder, it may be distended to an amazing extent; and when the bird has fished with success its size is almost incredible. A man may put his head into it

* Synonyms.—Pelecanus Onocrotalus. *Linn.*—Pelican. *Buff.*—Great White Pelecan. *Latham.*—Great Pelecan. *Penn.*

with the greatest ease; and, it has even been said that a man's leg, with a boot on, has been hidden in the monstrous pouch of one of these animals. In fishing the Pelecan fills this bag, and does not immediately swallow its prey; but when this is full retires to the shore to devour the fruits of its industry at leisure. Father du Tertre affirms that the bag of a large pelecan will contain as many fish as would serve sixty hungry men at a meal. They are not long in digesting their food, for they have generally to fish more than once in the course of a day.

At night, when the toils of the day are over, these birds, which are lazy and indolent to a degree, when they have glutted themselves with fish, retire a little way on the shore to take their repose for the night. Their attitude is with the head resting against the breast. They remain almost motionless till hunger calls them to break off their repose; thus spending nearly their whole life in eating and sleep.

When excited to labour, they fly from their station, and, raising themselves thirty or forty feet above the surface of the sea, turn their head with one eye downwards, and continue to fly in that posture till they see a fish sufficiently near the surface: they then dart down with the swiftness of an arrow, cease it with unerring certainty, and store it up in their pouch. Having done this they rise again, and continue the same actions till they have sufficiently stocked themselves.

How the ancients came to attribute to this stupid

bird the admirable qualities and parental affections for which it was celebrated amongst them, we can scarcely guess; unless struck with its extraordinary figure, they were desirous of supplying it with propensities equally extraordinary. For it is, in truth, one of the most heavy, sluggish, and voracious, of all the feathered tribes, and but ill fitted to take those flights, or to make those cautious provisions which it has been related to do.

These Pelicans are, however, by no means destitute of natural affection, either towards their young, or towards others of their own species. Clavigero, in his History of Mexico, says that some of the Americans, in order to procure a supply of fish without any trouble, cruelly break the wing of a live Pelecan, and after tying the bird to a tree, conceal themselves near the place. The screams of the miserable bird attract other Pelecans to the place, which, he assures us, throw up a portion of the provisions from their pouches for their imprisoned companion: as soon as the men observe this to be done they rush to the spot, and, after leaving a little for the bird, carry off the remainder.

The female feeds her young with fish macerated for sometime in her bag. Labat informs us, that he took two Pelicans when very young, and tied them by the leg to a post stuck into the ground; and he had the pleasure of seeing the old one come for several days to feed them, remaining with them the greatest part of the day, and spending the night on the branch of a tree that hung over them. By

this means they all three became so familiar as to suffer themselves to be handled; and the young ones always took the fish that he offered to them, storing it first in their bag, and then swallowing it at leisure.

The Pelecan has often been rendered entirely domestic; and one writer assures us, that he saw one among the Americans so well trained that it would, on command, go off in the morning, and return before night with its pouch distended with prey, part of which it was made to disgorge, and the rest it was itself permitted to take for its trouble.

According to the account of Faber, a Pelecan was kept in the court of the Duke of Bavaria above forty years. He says that it seemed very fond of being in the company of mankind; and when any one sang or played on an instrument, it would stand perfectly still, turn its ear to the place, and, with its head stretched out, seem to pay the utmost attention. We are told that the emperor Maximilian had a tame Pelecan that lived above eighty years, and always attended his soldiers when on their march. M. de Saint Pierre mentions his having seen at the Cape Town a large Pelecan, playing close to the custom-house with a great Dog, whose head she often took, in her frolic, into her enormous beak.

When a number of Pelecans and Corvorants are together, they are said to have a very singular method of taking fish. They spread into a large circle, at some distance from land; the Pelecans flap with their extensive wings above, on the surface, while

the Corvorants dive beneath; hence the fish contained within the circle are driven forward towards the land; and, as the circle lessens by the birds coming closer together, the fish, at last, are driven into a small compass, when their pursuers find no difficulty in filling their bellies. In this pursuit they are often attended by various species of Gulls, who likewise come in for a share.

THE CORVORANT.*

The weight of the Corvorant is about seven pounds; and its size (though it is much more slender) about that of a Goose. The general colour of the body is black; but the male has the feathers under the chin white, and likewise a short, loose, pendant crest; part of the wings is sometimes of a deep and glossy blue green. The bill is dusky, and in the lower mandible there is a naked yellowish pouch. The legs are short, strong, and black.†

These birds are common on our sea coasts, building their nests on the highest parts of the cliffs, that impend over the sea, and laying three or more pale green eggs, about the size of those of a Goose. In winter they disperse along the shores, and visit the fresh waters, where they commit great depredations among the fish. They are remarkably voracious, having a most sudden digestion, promoted, perhaps, by the infinite quantity of small worms that fill

* Synonyms.—Pelecanus Carbo. *Linn.*—Le Cormoran. *Buff.*—Sea Crow. *Montagu.*

† Penn. Brit. Zool. ii. 609.

their intestines. They are very wary birds, except when they have filled their stomach, when they become to stupid, that it is frequently an easy thing to take them in a net, or even by means of a noose thrown over their heads. The editor, in the year 1798, saw one that had been seized by the hand, when perched on the top of a rock just behind the town of Caernarvon; and in the year 1793 one of them was observed sitting on the vane of St. Magdalen's steeple, Ludgate Hill, London, and was shot from thence in the presence of a great number of people.*

Their smell, when alive, is the most rank and disagreeable of any bird; and their flesh is so disgusting, that even the Greenlanders, among whom they are very common, will scarcely eat them.

It is no uncommon thing to see twenty of these birds together on the sand of the sea coast, with extended wings, drying themselves in the wind :— in this position they remain sometimes near an hour, without once closing them; and as soon as they are sufficiently dry, to enable the feathers to imbibe the oil, they press this from the receptacle on their rumps, and dress the feathers with it. It is only in one particular state that the oily matter can be spread on them, when they are somewhat damp, and the instinctive powers of the birds teach them the proper moment to adopt.†

The skins of the Corvorants are very tough, and

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* Latham's Second Supp'ement, 363. † Ibid.

are used by the Greenlanders, when sewed together and put into proper form, for garments. The skin of the jaws, like that of others of this tribe, serves them for bladders to buoy up their smaller kinds of fishing darts.

Corvorants were formerly sometimes trained in this country, for the purpose of catching fish. They were kept with great care in the houses, and when taken to fish, had round their neck a leather thong, to prevent them from swallowing their prey: they were also hooded till taken to the water's edge. It appears that King Charles the First had an officer in his household entitled Master of the Corvorants.

THE GANNET.*

The Gannet is somewhat more than three feet in length, and weighs about seven pounds. The bill is six inches long, straight almost to the point, where it is a little bent; its edges are irregularly jagged, for the better securing of its prey; and about an inch from the base of the upper mandible, is a sharp process, pointing forward. The general colour of the plumage is dirty white, with a cinereous tinge: surrounding each eye is a naked skin of fine blue: from the corner of the mouth a narrow slip of naked black skin extends to the hind part of the head; and beneath the chin is a pouch, capable

* Synonyms.—Pelecanus Bassanus. *Linn.*—Fou de Bassan. *Buff.*—Soland Goose. *Willughby.*—Solan Goese. *Martin.*—Gannet. *Penn.*—*Penn. Brit. Zool.* ii. *tab.* 103.

of containing five or six Herrings. The neck is very long, the body flat, and very full of feathers; on the crown of the head, and back part of the neck, is a small buff-coloured space. The quill feathers, and some other parts of the wings, are black; as are also the legs, except a fine pea green stripe in their front. The tail is wedge-shaped, and consists of twelve sharp pointed feathers.

These birds frequent several of the Hebrides, and are sometimes seen on the Cornish coast, but seldom in any other parts of Europe. They are birds of passage, and first appear in the above islands about the month of March: they remain till August or September.

They are unsatiably voracious, disdaining to eat any thing worse than Herrings or Mackrel, unless in great want of food. No fewer than one hundred thousand of them are supposed to frequent the rocks of Saint Kilda, of which, including the young, at least twenty thousand are annually killed by the inhabitants for food. Allowing that these birds remain in this part about seven months in the year, and that each bird destroys five herrings in a day, which is considerably less than the average, we have at least one hundred and five millions of these, the finest fishes in the world, devoured annually by a single species of Saint Kilda Birds.

They build their nests on the highest and most precipitous rocks they can find near the sea, laying, if undisturbed, only one egg in the year; but if that be taken away, they will lay another, and if that is also taken, a third, but never more that season. The

egg is white, and rather smaller than that of the Goose. The nests are composed of grass, sea plants, or any refuse fitted for the purpose, that they find floating on the water. The young, during the first year, differ greatly from the old ones, being of a dusky hue, and speckled with numerous triangular white spots. While the female is employed in incubation, the male supplies her with food; and in their feeding of the young, the fish is extracted from the pouch with the bill of the young one, as if with a pincer.

These birds, when they pass from place to place, unite in small flocks of from five to fifteen, and, except in very fine weather, fly low, near the shore, but never pass over it, doubling the capes and projecting parts, keeping nearly at an equal distance from the land.

Mr. Pennant says, that the natives of Saint Kilda, hold them in much estimation, and often undergo the greatest risks to obtain them. Where it is possible, these men climb up the rocks which these birds frequent; and in doing this they pass along paths so narrow and difficult, as, to appearance, to allow them barely room to cling, and that too at an amazing height over a raging sea. Where this cannot be done, the fowler is lowered by a rope from the top, and to take the young, often stations himself on ledges the most dangerous: unterrified, however, he ransacks all the nests within his reach, and then, by means of a pole and his rope, moves off to other places to do the same. We are told also, that to take the old birds, the inhabitants tie a

Herring to a board, and set it afloat, so that by falling furiously upon it, they may break their necks in the attempt. This, however, is unlawful, for the fastening of herrings thus to planks at sea, to catch the Soland Goose, which is the same bird as the Gannet, is forbidden under a severe penalty.*

Some years ago one of these birds was flying over Penzance, in Cornwall, a thing that very rarely happens, when seeing some Pilchards lying on a fir plank, in a place for curing these fish, it darted itself down with so much violence, as to strike its bill quite through an inch and a quarter plank, and to kill itself on the spot.†

The Gannets seem to attend the Herrings and Pilchards during their whole progress round the British Islands; and they sometimes migrate in quest of food as far southward as the mouth of the Tagus, being frequently seen off Lisbon during the month of September. From this time till March it is not well known what becomes of them.

The young birds, and the eggs, alone are eatable, the old ones being tough and rancid.

THE BOOBY.‡

The Booby is about two feet and an half in length. Its bill is nearly four inches and a half long, toothed on the edges, and of a grey colour. A space round the eyes, and on the chin, is naked. The

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* Penn. Tour in Scotland, 1769, p. 199.

† Penn. Brit. Zool. ii. 619.

‡ Synonyms.—Pelecanus Sula. *Linn.*—Fou. *Buff.*—Booby. *Catesby.*

head, neck, upper parts of the body, wings, and tail, are ash-coloured brown; and the breast, under parts, and thighs white. The legs are pale yellow, and the claws grey.

This and some other species have been denominated Boobies from their excessive stupidity, their silly aspect, and their habit of continually shaking their head and shivering when they alight on the ship's yards, or other parts, where they often suffer themselves to be taken by the hand. In their shape and organization they greatly resemble the Corvorants.

The Boobies have an enemy of their own tribe, that perpetually harrasses them; this is the Frigate Pelican*; it rushes upon, pursues without intermission, and obliges them, by blows with its wings and bill, to surrender the prey that they have taken, which it instantly seizes and swallows. Catesby thus describes the skirmishes of the Booby and its enemy, which he calls the *Pirate*. "The latter (he says) subsists entirely on the spoils of others, and particularly of the Booby. As soon as the Pirate perceives that it has caught a fish, he flies furiously against it, and obliges it to dive under water for safety; the Pirate not being able to follow it, hovers above the water till the Booby is obliged to emerge for respiration, and then attacks it again while spent and breathless, and compels it to surrender its fish; it now returns to its labours, and has to suffer fresh attacks from its enemy."† Leguat says the Boobies repair at night to repose on

* Pelecanus Aquilus of Linnæus. † Catesby, i. 87.

the Island of Rodrigue; and the Frigates, which are large birds, and so called from the rapidity of their flight, wait for them on the tops of the trees: they rise very high, and dart down upon them like a Hawk upon his prey, not to kill them, but to make them disgorge. The Booby, struck in this way by the Frigate, throws up a fish, which the latter snatches in the air; often the Booby screams, and discovers a reluctance to part with its booty; but the Frigate scorns its cries, and rising again, comes down with such a blow as to stun the poor bird, and compel an immediate surrender.

Dampier gives us a curious account of the hostilities between what he calls Man of War Birds*, and the Boobies, in the Alcrane Islands, on the coast of Yucatan. "These birds were crowded so thic', that I could not (he says) pass their haunt without being incommoded by their pecking.—I observed that they were ranged in pairs, which made me presume that they were male and female. When I struck them some flew away, but the greater number remained, and would not stir, notwithstanding all I could do to rouse them. I remarked also, that the Man of War Birds, and the Boobies always placed centinels over their young, especially when they went to sea for provisions. Of the Man of War Birds, many were sick or maimed, and seemed unfit to procure their subsistence. They lived not with the rest of their kind, whether they were expelled from society, or had separated

* These are, most probably, the Frigate Pelicans just mentioned.

from choice: these were dispersed in different places, probably that they might have a better opportunity of pillaging. I once saw more than twenty on one of the islands, sally out from time to time into the open country, to carry off booty, and they returned again almost immediately. When one surprised a young Booby that had no guard, he gave it a violent peck on the back to make it disgorge, which it did instantly: it cast up one or two fish about the bulk of one's hand, which the old Man of War Bird swallowed still more hastily. The vigorous ones play the same game with the old Boobies which they find at sea. I saw one myself which flew right against a Booby, and with one stroke of its bill, made him deliver up a fish that he had just swallowed. The Man of War Bird darted so rapidly, as to catch it in the air before it could fall into the water."

THE FISHING CORVORANT.*

The following account of this Chinese bird, by Sir George Staunton, is the most authentic of any that has yet been given to us.

"The embassy (he says) had not proceeded far on the southern branch of the Imperial Canal, when they arrived in the vicinity of a place where the Leu-tze, or famed fishing bird of China, is bred and instructed in the art and practice of supplying his owner with fish in great abandance. It is a

* Pelecanus Sinensis, *Turton's Linn.*

species of the Pelican, resembling the Common Corvorant, but which, on a specimen being submitted to Doctor Shaw, he has distinguished in the following terms—' Brown Pelican or Corvorant, with white throat, the body whitish beneath, and spotted with brown; the tail rounded, and the irides blue; the bill yellow.'

" On a large lake close to this part of the canal, and to the eastward of it are thousands of small boats and rafts, built entirely for this species of fishing. On each boat or raft are ten or a dozen birds, which, at a signal from the owner, plunge into the water; and it is astonishing to see the enormous size of fish with which they return, grasped within their bills. They appear to be so well trained, that it did not require either ring or cord about their throats to prevent them from swallowing any portion of their prey, except what the master was pleased to return to them for encouragement and food. The boat used by these fishermen is of a remarkably light make, and is often carried to the lake, together with the fishing birds, by the men who are there to be supported by it."

The Comte de Buffon says, that they are educated to fishing as men rear up Spaniels or Hawks, and one man can easily manage a hundred. The fisherman carries them out into a lake, perched on the gunnel of his boat, where they continue tranquil, and wait his orders with patience. When arrived at the proper place, at the first signal each flies a different way, to fulfil the task assigned to it. It is very pleasant on this occasion to behold with what

sagacity they portion out the lake or canal where they are upon duty. They hunt about, they plunge, they rise an hundred times to the surface, until they have at last found their prey. They then seize it with their beak by the middle, and carry it without fail to their master. When the fish is too large, they then give each other mutual assistance; one seizes it by the head, the other by the tail, and in this manner carry it to the boat together. There the boatman stretches out one of his long oars, on which they perch, and being delivered of their burthen, again fly off to pursue their sport. When they are wearied, he lets them rest for awhile, but they are never fed till their work is over. In this manner they supply a very plentiful table; but still their natural gluttony cannot be reclaimed even by education. They have always a string fastened round their throats while they fish, to prevent them from swallowing their prey, as they would otherwise at once satiate themselves, and discontinue their pursuit the moment they had filled their bellies.*

THE RED-BACKED PELECAN.†

Mr. Lewis, a Navy Surgeon, described to Dr. Latham, the mode in which a Red-backed Pelecan that had been brought up tame, stowed its food into its pouch. Like others of its race, it was very voracious: a number of different sized fishes were laid before it on the ground: it first attempted to take up one that weighed ten pounds, but the bill

* Buff. Birds. † Pelecanus Rufescens. *Linn.*

was much too weak to raise it; it however picked up as many as ten others, each of which weighed about a pound, arranging them alongside of each other, with their heads towards the throat: and after this trudged off, in a very stately manner, with the bag hanging down to its feet. The pouch held about two gallons of water.*

THE DARTER TRIBE.

THE birds of this tribe have a small head, and a very long and slender neck. Their bill is long, straight, and sharp-pointed, and at its base are the nostrils, situated in a long and conspicuous fissure. The face and chin are bare of feathers. The legs are short, and the four toes are all webbed together.

There are but three species, and these are confined to the hot latitudes, two to America, and the third principally to Ceylon and Java. They live almost entirely on fish, which they take by darting forward their bill. They generally build and roost in the trees.

THE BLACK-BELLIED DARTER.†

The head, neck, and upper part of the breast of this bird are of a pale brown; and on each side of

* Latham's Synopsis.

† SYNONYMS.—Plotus Melanogaster. *Linn.*—Anhinga de Cayenne. *Buff.*—Black-bellied Anhinga. *Penn. Ind. Zool.*—Black-bellied Darter. *Latham.*

the head and neck is a broad white line. The belly, wings, and tail, are black; as are also the back, scapulars, and wing-coverts, but these are marked with white lines. The bill is blueish above, and somewhat red beneath; and the legs are of a yellowish green. It is about three feet in length, and is found in some parts of the south of Africa, in Ceylon, and Java.

In countries where every one's ideas are run on poisonous animals, any person who sees only the head and neck of the Black-bellied Darter, while the rest of the body is hidden among the foliage of a tree on which it is perched, must naturally mistake it for one of those Serpents accustomed to climb and reside in trees: and the illusion is increased by its having all the tortuous motions of those reptiles. In whatever situation it happens to be, whether swimming, flying, or at rest, the most apparent and remarkable part of its body is its long and slender neck, which is constantly in motion except during flight, when it becomes immoveable and extended, and forms with its tail a perfectly straight and horizontal line.

The principal food of this bird is fish, which, if small enough, it swallows entire; but, if too large, it flies off with them to some rock, or stump of a tree, and, fixing them under one of its feet, tears them to pieces with its bill.

Though water is its principal element, yet it builds its nest and rears its young on rocks and trees; but always on those that are so near the river, that it can, either in case of danger, or when

the young are old enough to learn to swim, precipitate them into it.

There are few birds that exceed these in sagacity and cunning, particularly when surprized on the water. In this situation it is almost impossible to kill them. Their head, which is the only part exposed, disappears the instant the flint touches the hammer of the gun; and, if once missed, it is in vain to think of approaching them a second time, as they never shew themselves more than once but at very great distances, and then only for the moment necessary for breathing. In short, so cunning are they, that they will often baffle the sportsman, by plunging at the distance of a hundred paces above, and rising again to breathe at the distance of more than a thousand below him: and, if they have the good fortune to find any reeds, they conceal themselves there, and entirely disappear.*

THE WHITE-BELLIED DARTER.†

Mr. Bartram, in his American Travels, says, that these birds have a way of spreading out their tail like an unfurled fan. They delight to sit in little peaceable communities, on the dry limbs of trees, hanging over the still waters, with the wings and tail expanded; and, when approached, they drop from the limb into the water, as if dead, and for a minute or two are not seen, when on a sudden, at a vast distance, their long slender heads and neck are

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* Vaillant's New Travels, i. 181.

† SYNONYMS.—Plotus Anhinga. *Linn.*—Anhinga. *Buff.*—Snake-bird. *Bartram.*—White-bellied Darter. *Latham.*

raised, and have much the appearance of Snakes, as no other parts of the body are to be seen when swimming, except sometimes the tip of the tail.—In the heat of the day they are often seen in great numbers, sailing high in the air over the rivers and lakes.

THE DIVER TRIBE.

THESE birds walk very awkwardly, and with great difficulty; but they fly very swiftly along the surface of the water, and swim and dive with remarkable dexterity. One division of them, the Guillemots, chiefly inhabit the sea; but the rest seldom frequent any but rivers and fresh-water lakes. They all live on fish.

Their bill is slender, pointed, and nearly straight; the nostrils are linear, and situated at the base. The tongue is long and slender; and the legs are placed backwards near the tail.

THE NORTHERN DIVER.*

The Northern Diver is near three feet and a half in length. The bill is black, and four inches and a half long. The head and neck are of a deep velvet black. Under the chin is a patch of white, marked with several parallel lines of black; and on each

* SYNONYMS.—Colymbus Glacialis. *Linn.*—Imbrim. *Buff.*—Greatest Speckled Diver, or Loon. *Willughby.*—Northern Diver. *Penn.*—*Penn. Brit. Zool.* ii. *tab.* 84.

side of the neck, and on the breast, is also a large portion of white, marked in a similar manner. The upper parts are black, marked with white spots; and the under parts are white. The wings are short, and the quills, tail, and legs, black. The female is less than the male.—It inhabits chiefly the northern seas, and is common on some of the coasts of Scotland.

Every part and proportion of this bird is so incomparably adapted to its mode of life, that in no instance do we see the wisdom of God in the creation to more advantage. The head is sharp, and smaller than the part of the neck adjoining, in order that it may pierce the water; the wings are placed forward, and out of the centre of gravity, for a purpose which shall be noticed hereafter; the thighs quite at the podex, in order to facilitate diving; and the legs are flat, and as sharp backwards almost as the edge of a knife, that, in striking, they may easily cut the water; while the feet are broad for swimming, yet so folded up, when advanced forward to take a fresh stroke, as to be full as narrow as the shank. The two exterior toes of the feet are longest; and the nails are flat and broad, resembling the human, which give strength, and increase the power of swimming. The foot, when expanded, is not at right angles to the leg, but the exterior part, inclining towards the head, forms an acute angle with the body; the intention being not to give motion in the line of the legs themselves, but, by the combined impulse of both, in an intermediate line, the line of the body.

Most people know, that have observed at all, that the swimming of birds is nothing more than a walking in the water, where one foot succeeds the other as on the land; yet no one, as far as I am aware, (says the Rev. Mr. White) has remarked that diving-fowls, while under water, impel and row themselves forward by a motion of their wings, as well as by the impulse of their feet; but such is really the case, as any one may easily be convinced who will observe Ducks when hunted by Dogs in a clear pond.—Nor do I know that any one has given a reason why the wings of diving-fowls are placed so forward: doubtless not for the purpose of promoting their speed in flying, since that position certainly impedes it; but probably for the increase of their motion under water, by the use of four oars instead of two; yet were the wings and feet nearer together, as in land-birds, they would, when in action, rather hinder than assist one another.*

THE CHINESE DIVER.†

The accounts that have been given of this bird are very imperfect. Its size is not known. Its bill is dusky: the upper parts of the plumage is greenish brown; and the fore-part of the neck the same, but paler. The chin, and under parts, are yellowish white, marked with dusky spots. The legs are ash-coloured.

This is supposed to be one of the birds used by the Chinese for catching fish. It has a ring fastened round the middle of the neck to prevent its swallow-

* White's Naturalist's Calendar.

† Synonyms.—Colymbus Sinensis. *Linn.*

ing; it has also a long slender string fastened to it; and thus accoutred is taken by its master into the fishing boat, from the edge of which it is taught to plunge after the fish as they pass by; and as the ring prevents these from passing down into the throat, they are taken from the mouth of the bird as fast as it catches them. In this manner it frequently happens that a great many are procured in the course of a few hours. When the keeper has taken a sufficient quantity of fish for himself, the ring is taken off, and the poor slave is suffered to satisfy its own hunger.*

THE GULL TRIBE.

THE Gulls inhabit chiefly the northern countries, where they feed on fish, either alive or dead, or even sometimes on carrion. They are very voracious, and, when terrified, throw up their undigested food. From their light body and long wings they are able to fly with considerable rapidity. The young do not become of the same colour with the old birds till their third year. The eggs are eatable, but their flesh is generally tough and unpalatable.

Their bill is strong, straight, and slightly hooked

* The bird most commonly used for this purpose by the Chinese fishermen is a species of Pelecan, the Fishing Corvorant (Pelecanus Sinensis), to which article the reader is referred for a further account of this singular mode of fishing.

at the point: on the under part of the lower mandible is an angular prominence. The nostrils are oblong and narrow, placed in the middle of the bill; and the tongue is somewhat cloven. The legs are short, and naked above the knees; and the back toe is small.

THE SKUA GULL.*

This bird is near two feet in length, and weighs about three pounds. Its bill is two inches and a quarter long, hooked at the end, and very sharp, and the upper mandible is covered more than half way down, with a black cere or skin, as in the Hawk kind. The feathers of the upper parts are of a deep brown, whilst below they are somewhat of a rust colour. The talons are black, strong, and crooked.

The Skua Gull inhabits Norway, the Fero Islands, Shetland, and the noted rock Foula, a little west of them. It is the most formidable of the Gulls; its prey being not only fish, but, what is wonderful, in a web-footed bird, all the lesser sorts of Water-fowl, and (according to the account of Mr. Schroter, a surgeon of the Fero Isles) Ducks, Poultry, and even young Lambs.

It has all the fierceness of the Eagle in defending its young. When the inhabitants of those islands visit the nest, it attacks them with such force that, if they hold a knife perpendicularly over their

* SYNONYMS.—Larus Cataractes. *Linn.*—Goeland Brun. *Buff.*—Sea Eagle. *Sibbald.*—Cataractes, or Cornish Gannet. *Ray. Will.*—Brown Gull. *Albin.*—Skua Gull. *Penn.*

heads, the Gull will transfix itself in its fall on the invaders. The Rev. Mr. Low, minister of Birfa, in Orkney, informs us that on his approaching the habitations of these birds, they attacked him, and the company along with him, in the most violent manner; and intimidated a bold Dog belonging to Mr. Low, in such a manner as to drive him for protection to his master. The natives are often very rudely treated by them while they are attending their cattle on the hills; and they are frequently obliged to guard their heads by holding up their sticks, on which the birds often kill themselves.

In Foula these birds are privileged, because they are said to defend the flocks from the attacks of the Eagle, which they beat off and pursue with great fury; so that even that rapacious bird seldom ventures to approach the places where they inhabit. The natives of Foula on this account lay a fine on any person who destroys one: they deny that they ever injure their flocks or poultry; but imagine that they live only on the dung of the Arctic Gull and other larger birds.

Review these numerous scenes, at once survey
Nature's extended face, then, Sceptics, say,
In this wide field of wonders can you find
No art discover'd, and no end design'd?

END OF THE SECOND VOLUME.

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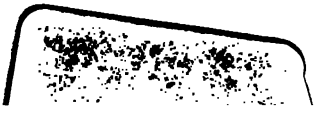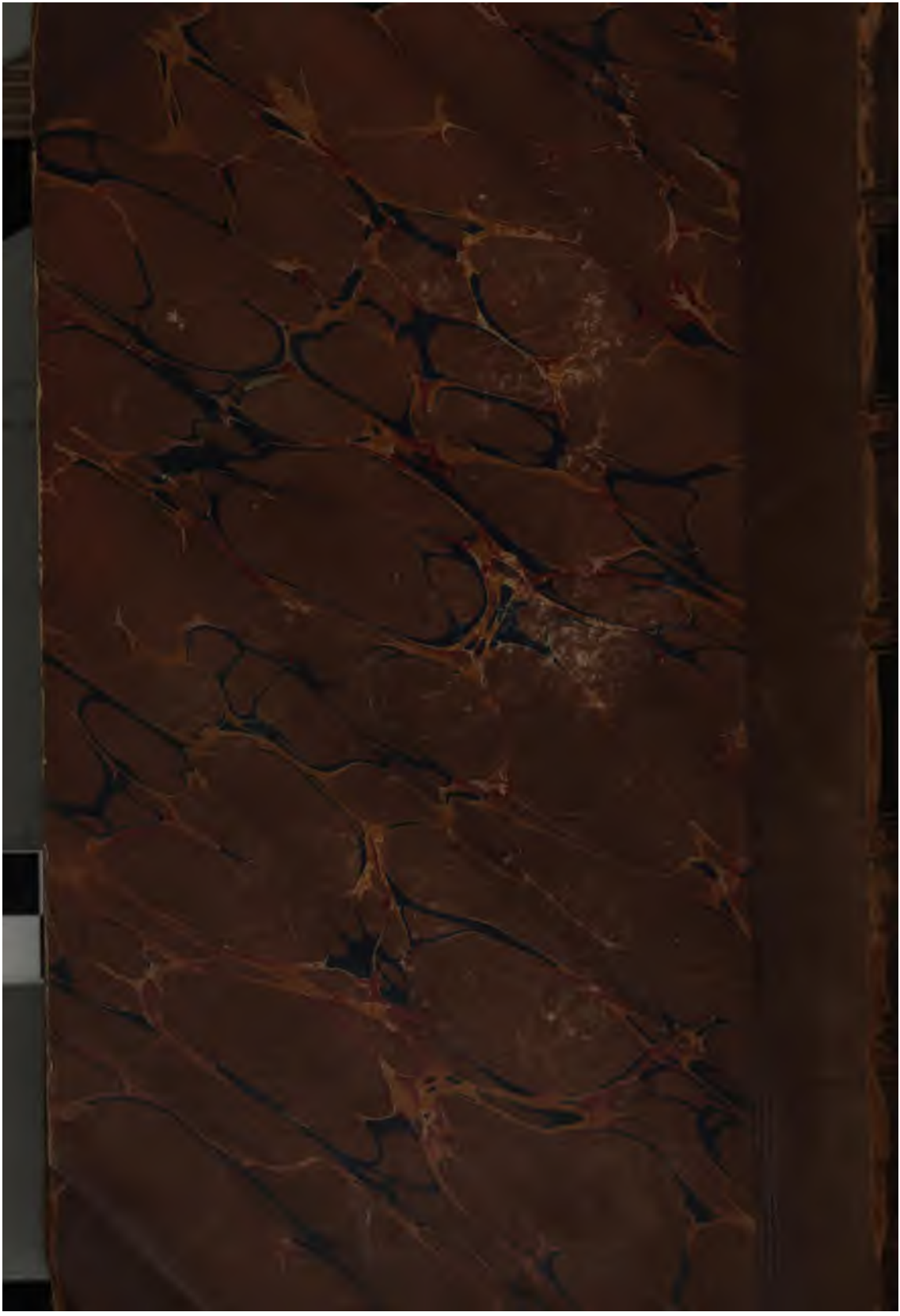
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